The Builder.

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AFTER seven sittings, the jury empanelled to inquire as to the deaths of the six persons who unfortunately lost their lives through the falling of the houses Nos. 146, 147, and 148, Tottenham-court-road, brought in the following verdict:—

"That the deaths of Frederick Bing, Ann Driscoll, John Garnett, Richd. Turner, James Kevil, and Joseph Taylor, were caused by the falling of the houses Nos. 146, 147, and 148, Tottenham-court-road.

That cutting the holes in the wall of 147 and 148 was the immediate cause of the accident, the party-wall of 146 and 147 being very indifferent, requiring more than ordinary caution, which in this case was not observed.

That the cutting away the party-wall between 147 and 148 was done in an unskilful and improper manner.

That the jury cannot separate without expressing their strong condemnation of the present conflicting state of the law as to the district and police surveyors, whose duties appear to be quite independent, and even antagonistic; and the jury sincerely hope that an immediate alteration will be made in the Building Act as at present constituted."

The last witness examined was Mr. Marsh Nelson, who had surveyed the premises, by direction of the coroner, and who read a lengthened report on the cause of the disaster, with observations suggested by it. First describing the circumstances under which the alterations were being made, he said the front wall of Mr. Maples's house was in a most unsafe condition, cracked and split in the middle by the front casing having parted from the backing, and that the materials (for the most part) of which it was built were of the worst description. The north party wall was fractured and bulged, and the chimney-shafts overhanging. The party-wall on the south side was not fractured in the basement story, but the materials of which it was composed were equally bad; further, that the new brickwork in the parts he saw where the work had been made good was also of a most inferior kind. Old bricks had been used without being properly bonded, and the cements did not possess the adhesive qualities of common mortar.

"The builders," he remarked, "in explanation, mentioned the names of well-known manufacturers and merchants by whom the cements were supplied, and it is much to be regretted that respectable houses will countenance the sale of such rubbish under the name of cement."

The work that was being done he considered very ill advised, and he came to the conclusion that the immediate cause of the accident was the cutting of the front hole in the party-wall between Mr. Hunter's and Mr. Maples's houses. The remainder of the report we give in the witness's own words, as printed in the daily papers:—

"The primary cause," he continued, "is to be ascertained, I think, from the evidence of the district surveyor. He stated that no detailed survey was made before permission was given for the alterations; the walls were not examined either in the basement story or in the roof. Now, had the district surveyor considered it part of his duty to make a proper survey in the first instance, the result would have been that both the party and front walls would have been condemned. The party-wall of Mr. Maples's house was absolutely fractured (not an ordinary settlement) and broken in the basement story about 6 feet from the front under the opening, that was increased in height, and it had bulged at the back under the part where the chimney-breasts were cut away.

On the roof the front wall of the adjoining house had separated from the party-wall, and the front wall has already been described as in a most rotten state.

Nothing, therefore, could be more unwise than attempting any alterations to houses in this state, and nothing short of rebuilding should have been permitted.

It is only justice to the district surveyor to state that, if the Building Act requires him to make a detailed survey and examination of a house before he sanctions any alterations (?), the Legislature has devised the best possible means of preventing him attending to his duties; his district extends from Tottenham-court-road to Highgate-hill, a distance of about three miles, and it contains upwards of 20,000 houses. Now, if he were to devote the whole of his time in surveying the houses undergoing alterations or in course of erection, assuming that the number of houses building—viz. 500 when the last census was taken—is the usual average, and adding the houses undergoing alterations, it would take him six weeks, allowing only half an hour to each house, to visit the works going on in his district; and if he surveyed in rotation after receipt of every notice, a builder would have to give a notice three weeks beforehand instead of two days, as required by the Act, to insure an early visit from the district surveyor. This is one of the many absurdities of the Building Act. In 1774, the date of the old Act, one district surveyor was allotted to the parish of St. Pancras, which probably then contained about 500 houses. The first official return is in 1801, the number being at that time 4,500, but at the present time it is estimated that the parish contains 20,700 houses, but still it has only one surveyor. It is quite impossible, therefore, for the duties to be properly performed.

This is the third accident attended with loss of life, and upon which I have been called upon to report, that has occurred in this division of the metropolis within the last two years and a quarter, and in my opinion all might have been prevented if the Building Act had contained proper regulations.

At the first accident seven lives were sacrified, and after what passed at that inquest it was confidently hoped that the Act would be satisfactorily remodelled.

In the latter end of the same year an alteration was made in the Act, and the Court of Official Referees (which caused, it was stated, great delays in dealing with ruinous structures) was abolished, and three other public departments were empowered to control and assist the district surveyors—viz. the Police Commissioners, the Metropolitan Board of Works, and the Commissioners of Sewers for the City of London.

The effect has been to create a difference of practice and division of authority, and the Act in this respect is more complicated and confused than before. The Metropolitan Board of Works, who appoint the district surveyors, have no power to interfere with dangerous structures; and the Police Commissioners adopt one course of proceedings in one part of London, and the Commissioners of Sewers another within the City. The two latter bodies dislike the duties imposed upon them by the Act, not being in any way connected with the ordinary duties of their departments. The Commissioners of Sewers have not appointed surveyors to administer to the Act, but return the notices to the district surveyors, directing them to be carried out, however arbitrary or improper they may be. The Police Commissioners employ surveyors, and the result is great jealousy on the part of the district surveyors, who are called upon to superintend works ordered by the Police Commissioners, and which, as in this case, they may consider improper; but still they are required by the act to supervise those works and see them carried out.

It is true that the Metropolitan Board of Works, under the Building Act, appoint an architect called 'the Superintending Architect of Metropolitan Buildings,' but, although his title is so comprehensive, he has nothing to do with the great mass of Metropolitan buildings to which the regulations of the Act apply. He can, in fact, only interfere in buildings where parties wish to construct them of iron, and in a peculiar manner; and even the principal public buildings of the metropolis are exempted from his supervision. Dangerous structures are wholly exempted from his as well as the Board of Works' control.

The houses where this sad accident has occurred is an instance of the practical operation of the Metropolitan Building Act; for, although some of its provisions were modified in 1845 and 1855, its spirit and administration are the same. A witness stated that he believed nearly the whole of the houses on the east side of Tottenham-court-road were in as bad and rotten a condition as Messrs. Maples and Hunter's houses, and these edifices, it should be recollected, are comparatively modern houses, having been erected under the Building Act about fifty-six years ago. My belief is (from a knowledge of the buildings in various parts of the metropolis), that not only are the houses on the eastern side of Tottenham-court-road in the state described, but that a very large proportion of the houses erected between 1774 and 1845 are and will be in a few years in the same condition, more particularly those formerly denominated fourth rates, such as are seen in the suburbs of London from several of the railways entering the metropolis.

I think that the Government incur a great responsibility in continuing in force such an Act of Parliament in the face of the frequently-expressed opinions of all parties, from the humblest builder to the judges of the land.

It is an Act which legalises bad building; it has made London as inferior to many continental cities as it formerly was superior, and by its conflicting, and, in many cases, absurd and contradictory regulations, defeats the only object that a proper Building Act should have in view, viz. the substantial construction of all houses and buildings without any exceptions whatever, for the prevention of the spread of fire, and for the protection of the inhabitants of the metropolis from such accidents as the painful one now under investigation."

We must be permitted to question the correctness of the impression sought to be conveyed by this report that the accident would not have happened if the district surveyor had done his duty. Disguised it may be, but this is unquestionably the inference deducible from the commencement of that portion of the report which we have printed. In the first place, as a general rule, it is not the duty of the district surveyor to see if proposed alterations can be made with safety, but that they do not contravene any of the provisions of the Act, and are carried out in accordance with its requirements. In one special case, that of requiring to cut away a chimney breast or shaft, the Act forbids it, unless the district surveyor certifies that it can be done without injuriously affecting the stability of the building. In Tottenham-court-road, by the way, this *was* done without the permission or knowledge of the district surveyor, and materially conduced to the ultimate disaster. In general, however, as we have said, this is not the duty of the district surveyor. Say, as an example, that a builder gives a district surveyor notice of his intention to put in a shop-front, the arrangement of the story-posts, bressummer, and projections being in accordance with the Act, we are not aware that the surveyor could, under the Act, prevent the alteration proposed because he found the wall above apparently so bad that the operation might be attended with danger. If the wall seemed really ruinous, he might send notice to the Commissioners of Police, calling upon them to appoint a surveyor to report upon it. This was precisely what Mr. Baker did in Tottenham-court-road, although, by accident probably, no mention of this, nor of the fact that he also gave the builder notice to take down the wall which afterwards fell, is made in Mr. Nelson's report. In the district surveyor's notice to the police of the ruinous state of the party-wall, he also, as we understand, directed their attention to the condition of the premises generally, and, having done this, had done all that the Act empowered him to do in that respect.

The excuse which Mr. Nelson offers for the district surveyor, supposing an excuse needed, is, that his district is much too large, and that "assuming that the number of houses building (viz., 500 when the last census was taken) is the usual average, and adding the houses undergoing alterations, it would take him six weeks, allowing only half an hour to each house, to visit the works going on in his district."

We shall not inquire if the district of St. Pancras be or be not too large, but the figures here given are certainly incorrect. Instead of 500 new buildings (as printed in the *Times*), Mr. Marrable's published "Report on the Examination of the Monthly Returns of District Surveyors," shows, that the number of new buildings in this district in the year 1856 was 162, *spread over twelve months*, and including stables, workshops, and other small erections. Further, many of these being in rows of eight or ten together, nothing like such a time as half an hour for each house each visit is necessary to enable the district surveyor to see that the requirements of the Act have been attended to.

When an old house tumbles down, the newspapers immediately throw the blame on the district surveyor; although, as they ought to know very well, he is in no degree responsible, and has no power to interfere to prevent such a disaster, beyond sending notice of the state of the house, if it reach him, to the Police Commissioners.

Mr. Nelson very properly points to the division of authority, in respect of ruinous buildings caused by the present Building Act. He says, speaking of the authority given to the Commissioners of Sewers (in the city), and the Police Commissioners, — "The Commissioners of Sewers have not appointed surveyors to administer the Act," &c.: but, "The Police Commissioners employ surveyors, and the result is great jealousy on the part of the district surveyors, who are called upon to superintend works ordered by the Police Commissioners." We have never seen evidence of this jealousy, and doubt its existence, but it is not to that we would refer. There is an obscurity in the observation as to the employment of surveyors, which leads to a wrong impression. Thus, the *Times*, commenting on the report, says,—

"The Metropolitan Board of Works appoint the district surveyors; but, if we rightly apprehend the matter, they have no further right to interfere with their operations. The Police Commissioners, however, exercise control over them without, and the Commissioners of Sewers should do so within, the City boundaries. These two bodies should appoint surveyors to check the proceedings of the district surveyors. The Police Commissioners

have done so, but the Commissioners of Sewers have neglected so to do, and have left the district surveyors to take their own way."

The fact is, the two bodies in question are *not* called upon to "appoint surveyors to check the proceedings of the district surveyors;" the police commissioners have *not* done so, and have no power to do so. As we have again and again pointed out, the district surveyor is bound by Part II. of the Building Act, to make known to the commissioners of police (if the structure be not in the City of London), or to the commissioners of sewers (if it be), any information he may receive with respect to any structure being in a dangerous state, and the commissioners are then to require a survey to be made "by the district surveyor, or some other competent surveyor." The police commissioners determined, on the passing of the Act, to employ a surveyor of their own, not "to check the proceedings of the district surveyors, but to make these surveys; and a district surveyor, having sent off to Scotland-yard the notice he may have received, has nothing more to do with the matter, has no power to interfere in it, and knows nothing whatever of the steps taken until he receive from the builder notice of an intention to do such works as may be necessary.

The district surveyor ought, at any rate, to receive from the police commissioners a copy of the notice given by their surveyor; but this is never sent to him, probably because of the large amount of work there has been to do. The same excuse would probably be pleaded for occasional great delays, for the loose wording of many of the notices from the police authorities, and for non-attendance afterwards to see that the notice has been carried out. From statements which have been forwarded to us by more than one correspondent, it would seem that, in consequence of the illness of the surveyor to the police, the duties have been discharged for some time by a deputy, at a small salary, who has found twelve or thirteen hours a day insufficient for the work, and who has had at times twenty or thirty notices in his pocket waiting to be attended to. We are told that since the Act came into operation, January 1st, 1856, 2,600 such surveys have been made, representing fees to the amount of at least 2,600*l.* so that there can be no reason for the non-employment by the police commissioners, of a sufficient number of competent surveyors to discharge the duties imposed by the Act efficiently and without delay.

ROME.*

ALTHOUGH of small elevation, the hills of Rome appear originally to have been abrupt or precipitous in their sides, which characteristic may still in many parts be observed—their summits forming level surfaces detached from the other parts of the city, except in the case of the Quirinal, Viminal, and Esquiline, which are rather offshoots from the more extensive plateau towards the east than isolated hills. Swamps occupied the lower portions of the intervening valleys, and a portion of the Forum itself was traditionally a mere marsh, of which the Lacus Curtius was one of the last remnants.

"Hoc ubi nunc fora sunt, udæ tenuere paludes:
Amne redundatis fossa madebat aquis.
Curtius ille lacus, siccas qui sustinet aras
Nunc solida est tellus, sed lacus ante fuit."

These marshes were particularly prevalent in the valleys separating the Capitoline, Palatine, and Aventine hills, the broader portion of which was known as the Velabrum, and for the drainage of which the Cloacæ of Tarquin were doubtless originally designed. Of these Cloacæ, that called Maxima still presents a remnant for our instruction. The vault is formed of three concentric arches, making an aggregate thickness of about 6 feet, and the sewer altogether is about 13 feet in width and height in the clear. The stone of which it is built is of itself a proof of its extreme antiquity, being the *tufa lithoide* of Brocchi, one of the volcanic formations found in many parts of Rome, and which was afterwards supplanted in public buildings by the finer quality of the peperino. The portion of the Cloaca Maxima, built by Tarquin, commenced near the arch of Severus, then passed under the Via Sacra to the Temple of Julius, thence, following the course of the Via Nova at the base of the Palatine, it crossed the Forum Boarium, and ran straight to the Tiber, which it entered near the Ponte Rotto. Subsequent additions were made to this sewer as far as the Suburra, vestiges of which were discovered in 1742. The expense of cleansing these sewers was defrayed partly by the treasury, partly by the assessment called *Cloacarium;* and under the republic the censors, and under the empire officers called *cloacarium curatores*, had the administration of these works.

After the occupation of the valley between the Palatine and Aventine by the Circus Maximus, the name Velabrum became gradually restricted to the street through which the processions passed from the Forum to the Circus, in which sense it was known in the Middle Ages, and still survives in the title of the old church of S. Giorgio *in Velabro*. The contiguity of the Forum Boarium to the Velabrum is proved by the passage of Livy, "Inde vico Tusco Velabroque per Boarium Forum," &c.; and also by the inscription on the arch of the Goldsmiths, still standing near S. Giorgio. To a late period the Vicus Tuscus was the great line of communication between the Forum and the Circus Maximus and Forum Boarium, and through it, upon the occasion of the Circensian Games, passed the magnificent procession called the Pompa Circensis.

Another point of interest in the neighbourhood of the Forum is the position of the once busy and crowded quarter called Suburra. It is to the north-east of the Forum, in the broad valley between the terminating points of the Quirinal, Viminal, and Esquiline, whence two long and narrow valleys separate those hills from each other, whilst a third valley pierces the Esquiline itself in an easterly direction, towards the Arch of Gallienus, that we must look for this celebrated locality. Marliano and the earlier Italian topographers took a far more correct view of this and of many other disputed points than Nardini and the later ones; the difficulties of the latter being mainly owing to their reliance upon the spurious catalogues of Victor and Rufus, which remove it from the fourth region in which it is found in the "Notitia," and place it, for no possible reason, the one in the second and the other in the third. The position thus assigned to the Suburra at the back of the range of imperial fora, and through which the Transitorium would form a direct communication with the Forum Romanum, is supported by many local proofs, such as the small piazza at the foot of the Via di Sta. Lucia, which still bears the name Suburra, and in the appellation of the ancient church of Sta. Agatha in Suburra, on the brow of the Quirinal, in its immediate neighbourhood, &c. The doubts that have been raised as to whether the term was applied to a quarter or only a single street is but of small moment, as it probably was first one and then the other; but at all events, so early as the sixth century it had reassumed its more extensive signification, as St. Gregory speaks of the church of St. Agatha as "in regione urbis illa, quæ Suburra dicitur."

To the valley which separates the Quirinal from the Viminal we can assign no ancient appellation; but in the valley between the latter and the Esquiline was the Vicus Patricius, for which we have the testimony of Anastasius and of the Anonymous of Einsiedlen, both of whom clearly state that the ancient church of Sta. Pudenziana, which still exists, was built *in vico Patricii*, which must thus have occupied the line of the present Via Urbina.

The position of the Vicus Patricius established, those of the Cispius and Oppius—both offshoots of the Esquiline, but included in the original seven hills—by an important passage of Varro, given us by Festus, become equally established. By the same passage of Varro, the Carinæ is placed upon the westernmost point of the Oppius, originally a small fortified village, but in the later ages of the republic one of the most aristocratic quarters of the city. In addition to the above evidence of Varro, that writer states that it was comprised, together with the Cælian hill, in the Regio Suburra of Servius; and the fact of this quarter bearing the name of *Le Carra* throughout the Middle Ages, and as late as the sixteenth century, is another confirmation of its locality.

The *Regiones* into which Servius divided the city were but four in number, and did not embrace its whole extent. They were denominated the *Suburana*, the *Esquilina*, the *Collina*, and the *Palatina*, and, amongst other omissions, did not include the Capitoline hill or the valley of the Forum, or of that of the Velabrum or the Aventine. Various conjectures have been advanced to account for these omissions, and different readings of passages in Varro and Livy, relative to certain chapels instituted by Numa, which influenced the limits of the Regions, have added this to the list of unsettled questions.

Augustus made a fresh division of the city into fourteen Regions, each consisting of a certain number of vici. Each vicus consisted of a certain collection or plot of houses surrounded by streets (whence the term became applied to the streets themselves), each vicus being composed of two classes of houses, called respectively *insulæ* and *domus*. The law for building each house detached, which had been disregarded during the republic, was again enforced by Nero after the fire, a passage, called *ambitus* or *circuitus*, being left round each for the purpose of disconnection. The *insulæ* were the habitations of the middle and lower classes, and were generally let out in floors; the *domus* were the habitations of the rich, and were consequently comparatively few. Each region was composed of a certain number of vici, and were distinguished for a long period by numbers only,—the period when names were first applied to them being impossible now to determine; but as late as Hadrian the numbers only were still in use, as shown in the Basis Capitolina. Though the exact boundary of these regions cannot be traced with certainty, a general view of the situation of each, and the principal objects of antiquity within it, may be given in a few lines.

Regio 1, *Porta Capena*, included the suburb beyond that gate, east of the Baths of Antoninus, and contained the Temple of Mars, Tomb of the Scipios, and the Arch of Drusus.

Regio 2, *Cælimontana* included the Cælian hill, and contained the Arch of Dolabella, and the arches of the Aqueduct of Nero.

Regio 3, *Isis and Serapis*, comprised the Valley of the Colosseum and the offshoot of the Esquiline, originally called Oppius, and contained the Flavian Amphitheatre, and the Baths of Titus and Trajan.

Regio 4, *Templum Pacis, or Sacra Via*, comprised the greater part of the valley between the Palatine, Esquiline, Viminal, and Quirinal, and contained the Colossus of Nero, the Temples of Venus and Rome, Antoninus and Faustina, Peace, the Sun and Moon, the Basilicas of Constantine and Paullus, the Forum Transitorium, &c. and included also the Suburra and the greater part of the Sacred Way.

Regio 5, *Esquilina*, included the Cispius and the Viminal, and a large tract of suburbs lying to the east of the Servian walls and Agger, embracing the Amphitheatrum Castrense, and the building called Minerva Medica, and amongst its principal contents, were the Gardens of Mæcenas, the Arch of Gallienus, the Nymphæum of Alexander Severus, Baths of Olympia, Helena, and Agrippina, Circus Varianus, &c.

Regio 6, *Alta Semita*, embraced the Quirinal, and extended to the east, so as to include the Prætorian Camp, and contained the house and gardens of Sallust, baths of Diocletian, Constantine, and Paulus, the ancient capital, and Temples of Flora, Quirinus, and many others.

Regio 7, *Via Lata*, bounded on the east by the Quirinal, on the north by the Pincian, on the south by the Servian wall, and on the west by the Via Lata, included in its chief objects the Temple of the Sun, Arches of Gordianus, Claudius, and Verus, Tombs of Bibulus, of the Claudian family, &c.

Regio 8, *Forum Romanum*. — This important

* See p. 308, *ante*.

region included in its extent the ancient Forum and its contents, embracing those important buildings in its circuit which we have already described, from the Temple of Cæsar, along its south side to the Capitoline Hill, which was also included in it, together with the valley between it and the Palatine, as far as the Velabrum, and thence extending on the north side of the Forum as far as the Transitorium, including the Fora of Cæsar, of Augustus, and of Trajan, with the Basilica Ulpia, and numerous temples and monuments that we need not enumerate.

Regio 9, *Circus Flaminius*, comprehending the district lying between the Via Lata on the east, the Tiber on the west, the Capitoline on the south, and the Piazza Navona and Colonna on the north, included the theatres of Balbus, Pompey, and Marcellus; the Pantheon, the Baths of Agrippa and Nero, porticos of Octavia and Philip, and many other monuments.

Regio 10, *Palatium*, containing the whole of the Palatine-hill. This hill, at once the cradle of Rome, and the chosen residence of its emperors, is a scene of peculiar interest, from the extensive ruins that occupy so large a portion of it; but the arrangement of which, into anything like pristine form, must remain a problem not easily to be solved. Although long subsequent to the reign of Nero, the Notitia and other authors still speak of the *Domus Augustiana* and *Tiberiana*, as applied to portions of the new palace, it by no means proves that those portions retained their original character, as the expressions of Tacitus would argue almost a total destruction by fire of the original buildings. Many subsequent alterations were made to the palace of Nero itself; and Domitian, Severus, and Elagabalus are all recorded as having added to its extent and splendour; but of their individual labours the only portion whose founder is matter of certainty, was the Septizonium of Septimius Severus, at the south-east angle of the palace, near the Porta Capena, where a large portion was standing till near the end of the sixteenth century, when it was demolished by Pope Sixtus V. A spot of greater interest for the general scholar, as connected with the earliest legends of Rome, was the Germalus, the part of the hill hallowed by the presence of the Lupercal, or grotto, in which the twin-founders of the city were nursed by the she-wolf. The Germalus was one of the ancient seven *montes* of the Septimontium, which we must remember was very different from the "Septem domini montes" of the Imperial City; and in the same relation to the Palatine was the Velia, another member of the Septimontium, but whose situation is not so clear, as Niebuhr and Bunsen place it north-east of the Palatine, and the later Italian antiquarians, north-west.

Regio 11, *Circus Maximus*, was principally composed of the valley between the Palatine and Aventine, and included the Velabrum on the north. It comprised the Circus Maximus and temples to Ceres and Proserpine, Mercury, Portumnus, Vesta, Juno Matuta, &c.

Regio 12, *Piscina Publica*, was bounded on the north by the Cœlian, on the east by the Region of the Porta Capena, on the west by the Aventine, and on the south by the Aurelian walls, and the chief object in its circuit was the Baths of Caracalla.

Regio 13, *Aventinus*, comprised that hill and adjacent parts, and included in its extent the sepulchre of Caius Cestus.

Regio 14, *Transtiberina*, was the largest of the regions, including the Vatican, Janiculum, with the district between them and the river, and the Insula Tiberina. Such were the famous regions of Augustus, as instituted by him for the better administration of the municipal regulations of the city.

We have found it impossible to allude to more than a very few of the disputed topographical points in this favourite field of antiquarian polemics, where every inch of ground has been disputed, where an argument has been found for every theory, and every fresh theory has found a train of zealous adherents. Nor can we, by the same rule, venture to touch upon more than one or two of those architectural divisions into which the monuments of the city may be divided, and which Canina has classified into walls, temples, fora, and buildings belonging to them, porticos, theatres, amphitheatres, circi, baths, aqueducts, bridges, triumphal arches, honorary and sepulchral monuments, and private buildings.

Of the works of ancient Rome there is none of equal antiquity so well preserved as the Pantheon, which may partly be ascribed to its having been converted into a Christian church so early as the reign of Phocas, and it is not one of the least of the proofs of the noble scale upon which the Romans constructed their regal edifices, that this magnificent rotunda, with its noble portico, which Forsyth pronounced to be "*positively* the most sublime result that was ever produced by so little architecture," should be considered by many, and amongst them Canina, to have been a mere vestibule to the Baths of its founder.

"Glorious dome!
Shalt thou not last? Time's scythe and tyrants' rods
Shiver upon thee—sanctuary and home
Of art and piety—Pantheon! pride of Rome!"

As in the later styles of architecture that have prevailed, a taste for redundancy of ornament and unnatural combination has enfeebled and effeminatised until the masculine dignity and real symmetry of the original type has disappeared beneath the weight of riches that has helped to crush it, so was it with that of Rome. The arts of Greece, transplanted into this new soil, found a style already established with which it was forced to combine. The Greek column and entablature became united with the Roman arch and vault; and though a style of much beauty was evoked from the combination, yet the antagonistic principles that stamped its parentage produced at last a taste for incompatible ornament, the vigour of the originals was lost in the ill-assorted union, and beauty was sacrificed to the fault of over-enrichment.

"Another enemy," says Forsyth, "to the beautiful, and even to the sublime, was that colossal taste which arose in the empire, and gave an unnatural expansion to all the works of art. In architecture it produced Nero's golden house and Adrian's villa; in hydraulics it projected the Claudian emissary and Caligula's Baian bridge; in sculpture it has left at the Capitol such hands and feet as betray the emperor's contempt for the dimensions of man; in poetry it swelled out into the hyperboles of Lucan and Statius. This exaggerated spirit spread even to the games. Nero drove ten horses yoked abreast to his car, and double that number appear on an ancient stone."

The same colossal taste is evinced in the various thermæ of Agrippa, Nero, Titus, Trajan, Caracalla, Diocletian, and Constantine; in the imperial palace, which, taking root in the modest mansion of Hortensius, covered the whole palatine, and branched over to the Esquiline, also in the mausolea of Augustus and of Hadrian, in the theatres of Pompey and Marcellus, and in the Colosseum.

The erection of an amphitheatre in the midst of Rome was one of the designs of Augustus, but it was by Vespasian and Titus that the Flavian Amphitheatre was begun and finished. From its vast size, the subsequent erection of any other such building in Rome was rendered unnecessary. It stood on the site previously occupied by the Lake of Nero, between the Velian and the Esquiline, and was capable of containing 87,000 persons. In the reign of Macrinus it was so much damaged by a fire occasioned by lightning, that it was necessary to exhibit the *gladiatores* and *venationes* for several years in the Stadium. Its restoration was completed by Alexander Severus, and the *venationes*, or combats with wild beasts, were continued in it as late as the sixth century. In the Middle Ages it was used as a fortress, and a portion was at a later period destroyed by the Romans themselves for materials for the Cancallaria and Palazzo Farnese. Here sat the conquerors of the world, coolly to enjoy the tortures and death of men who had never offended them. "Two aqueducts were scarcely sufficient to wash off the human blood which a few hours' sport shed in these imperial shambles. Twice in one day came the senators and matrons of Rome to the butchery. A virgin always gave the signal for slaughter; and when glutted with blood-shed, those ladies sat down in the wet and streaming arena to a luxurious supper."

From the silence of Vitruvius upon triumphal arches, we may suppose that those that existed in his time, if any, were few and insignificant. Of twenty triumphal arches recorded by different writers as erected in Rome, but four now exist, namely, — that of Drusus, erected to Nero Claudius Drusus, on the Appian Way; that of Titus, at the foot of the Palatine, erected to his honour after his conquest of Judæa; that of Septimius Severus, at the end of the Via Sacra, erected to that emperor and his sons Caracalla and Geta, on account of his victories over the Parthians; and that of Constantine, erected to him by the Senate after his victory over Maxentius. Of the Arch of Tiberius, at the foot of the Clivus, no remains exist. The same may be said of the Arcus Novus, or of Claudius, on the Via Flaminia; that of Verus, that of M. Aurelius, and that of Gordian on the Via Flaminia. The term *arcus* seems to have been applied to arches of triumph only, and that of *fornix* to those of entrance; and as the use of the former was to receive the conqueror returning from the scene of his achievements, so was it the custom to place these arches on the Via Triumphalis only, on the route to the Capitol, where he deposited the spoils of his victories, and where the triumph terminated in sacrifices. A Roman conqueror found his greatest reward in this public ceremony; and if the triumph was decreed by the Senate, by so much was the honour enhanced; but if the triumph into Rome was denied, he contented himself with the minor honour of a procession to the temple of Jupiter Latialis, on the Alban Mount, to which we before alluded (page 182), and where, upon the basaltic pavement may still be read the letters N. V.—*Numinis Via*.

Of the triumphal processions of the emperors, who, upon the concentration of the supreme power into their own persons, chose to exhibit themselves in this manner—the description of that of Aurelian, as given by Vopiscus, and paraphrased by Gibbon, with all its barbaric splendour and cruelty, and which may be taken as an average specimen. As these arches are so well known to architects, we shall offer no description of them, nor, indeed, will it be possible to touch upon the architecture of Rome in the present limited series of papers.

Of the aqueducts, there were nine principal ones in the time of Frontinus—the Appia, Annio Vetus, Marcia, Tepula, Julia, Virgo, Alsietina, Claudia, Annio Novus, and the subsidiary ones, called Augusta and Rivus Herculaneus.

Between the time of Frontinus and that of Procopius, they had considerably increased in number, since the latter historian relates that the Goths destroyed fourteen aqueducts that were within the walls. The "Notitia" enumerates nineteen, but to give a history of these would far exceed our limits, and we must content ourselves with one or two general observations upon them.

It is to S. Julius Frontinus, *curator aquarum*, under Nerva and Trajan, who wrote a treatise upon the subject, that we derive our chief knowledge about these aqueducts. The facts of the Greeks not having had aqueducts, and of the Romans having had them instead of pipes, which facts used to be accounted for by the summary reasons that the Greeks, not knowing the principle of the arch, could not construct them, and that the Romans, not knowing the laws of hydrostatics, could not do without them, has of late years received fresh solutions in the more probable reasons, that the Greeks, having an abundant supply of water, had no need of them; and that the Romans, though well aware of the grand leading principle of hydrostatics, still preferred them. As regards the Romans, Vitruvius not only expressly speaks of the law, but describes its application in a particular instance; and Pliny, in describing the passage of water through pipes, states the law clearly in the terms, "Subit altitudinem exortus sui." Of these aqueducts, four belong to the time of the Republic, whilst five were built in the reigns of Augustus and Claudius.

The Aqua Appia (so called from its founder, Appius Claudius Cæcus) was the first of these public works, and commenced near the Via Prænestina, between the seventh and eighth milestone. The Anio Novus was the longest and most lofty of them, being nearly 59 miles

long; and its arches occasionally 109 feet high. To complete the fourteen described by Procopius, five more must be added; but two only of these are certain,—the Trajana and Alexandrina.

Of equal interest is the subject of Vise or Roads. They were divided into *privatæ* or *publicæ*, the former being those the use of which was free, while the soil itself remained private property; the latter, those of which the use, management, and soil were alike vested in the State. The *viæ publicæ* of the highest class were distinguished by the terms *militares, consulares,* and *prætoriæ*. Vitruvius gives no details for road-making, but gives minute directions for pavements; and the fragments of ancient pavements still existing correspond so exactly with the remains of military roads, that we cannot doubt that the processes in each case were identical. The most elaborate treatise upon the Roman roads is that of Bergier, published in 1622, which must be consulted for the details, extensions, and changes of the various roads that issued from Rome, and to which the researches of numerous local antiquaries have added much. The following were the principal roads starting from Rome itself,—the Appia, Latina, Labicana, Prænestina, Collatina, Nomentana, Salaria, Flaminia, Aurelia, Portuensis, Ostiensis, and Ardeatina.

The excavations and discoveries upon the Via Appia, under the superintendence of the late Canina, are too well known to require more than a passing allusion. His volumes descriptive of all that he had done upon that extraordinary line of road, with his views of the monuments that adorned it in their ruin and in their perfection, were the last result of his indefatigable industry and versatile invention.

A slight sketch of the authors to whose labours, from the revival of art, we owe our knowledge of all that appertains to Roman architecture must be of interest to the architect. Our first insight into the bygone splendours of Rome, after the long night of darkness that had veiled them from the world, were principally derived from various drawings of Roman monuments by Alberti, Bramante, Perruzzi, San Gallo, and their contemporaries, though these were mostly unpublished. Labacco was one of the first who published with some accuracy, at the beginning of the sixteenth century, some of the ancient buildings—such as the Mausoleum of Adrian, temples of Mars Ultor, Antoninus and Faustina, Venus in the Forum of Cæsar, &c. Serlio, of Bologna, architect to Francis I. furnished several plans and drawings of ancient Roman buildings, in the 3rd book of his work on "Architecture." Buffalini's great plan of Rome, as it was in 1551, was most important for Roman topography; but all that now remains of it is an imperfect copy in the Barbarini palace. Pirro Ligorrio, about the middle of the sixteenth century, treats of circi, theatres, and amphitheatres, but from his works, says Canina, one cannot derive much precise knowledge. Bernardo Gamucci also published several views about same time. In 1570 appeared the great work of Palladio; as Canina observes, showing greater diligence and knowledge of ancient art than had yet been evinced. Afterwards were published all the drawings of Palladio, from the ruins of the thermæ of Rome, with his restorations corrected and improved by Cameron, and reproduced in Italy by Scamozzi, whose "Discorsi sopra le Antichità di Roma" contains some good views, but insignificant letterpress. In 1574, Ursinus assisted the French architect, Du Perac, in drawing up a plan of the restored city, which was published by Giacomo Lauro: it is, however, erroneous and of little service. Of more value are the views of ancient monuments of Du Perac, published in 1573. Of Vignola we have only a few interpretations of certain parts drawn from ancient monuments. Other authors have contributed in various degrees to our knowledge, as Sulpicio, Giacondo, Leto, Cesariano, Durantino, Macheropia, Filandro, Barbaro, Caporale, Fontana, &c. Fabretti illustrates the writings of Frontinus on the aqueduct, Bosio in his *Roma Sotteranea*, Aringhi, in his *Roma Subterranea Novissima*, Cassio, Barbault, Bianchini, Overbeke, and many others, swell the list of contributors to the illustrated literature of Rome.

Desgodetz was the first who, whilst seeking to purge the art of building from the bad practices introduced in the sixteenth and seventeenth centuries, showed with exactness and consummate ability the remains of the ancient fabrics of Rome. He contented himself with leaving the ruins as he found them, only showing the portions that appeared above earth, measuring and restoring them with great exactness, and exposing the inaccuracies of Palladio, Serlio, Labacco, and De Chambray. His work, published in 1682, commenced a new era in architectural restorations, and in many respects has hardly been surpassed.

Piranesi gives drawings of several monuments not previously published, reproducing also with some previously published. According to Canina, he represents generally with much truth all that he saw existing in the ruins, but where he had to supply deficiencies from imagination, he produced results, *tanto lontane dal vero e così capriciose che difficilmente si sarebbero potute esegiure in qualunque genere di architettura.*

Mirri, Bianconi, Uggeri, Durand, Cipriani, and Il Piroli, have followed in various degrees, and a host of others down to the present time have given the produce of their labours in this fruitful field for the benefit of the world in general.

One more only can we cite. Though temples have changed their names, fora their limits, and excavations disclosed the fallacies of mere scholarship since Messrs. Taylor and Cresy published their volumes upon "The Architectural Antiquities of Rome," still their excellent drawings and accurate measurements are not deteriorated in value in the slightest by such changes, and it is, and must ever be one of the most valuable of our works upon this subject.

And here, for a time, we must leave the engrossing subject of the topography of the Eternal City, the foregoing sketch of some of the leading points of its controversies being prepared solely for the benefit of those who have been accustomed to regard the subject of Rome in an architectural light only.

Study it, however, as one may, whether as architect, topographer, or simple traveller, one cannot fail to become moralist; and beautiful but sad is the reflection of the historian, that "the art of man is able to construct monuments far more permanent than the narrow span of his own existence: yet these monuments, like himself, are perishable and frail; and in the boundless annals of time, his life and his labours must equally be measured as a fleeting moment."

ALEX. FRED. ASHTON.

THE GOVERNMENT COMPETITION DESIGNS.*

IN the design for the Foreign-office, numbered 100, and having the motto, "Vivat Regina," the Gothic style is adopted. The drawings show a very lofty inner hall, with a groined ceiling, and crowned externally by a spirelet and pinnacles, the ceilings generally being groined, or waggon-headed, whilst the exterior displays a profusion of pinnacles, canopies, and traceried oriels.—No. 101 having also the motto "Vivat Regina," but with a red cross on a black ground, has been attributed to Mr. Knowles, jun. and has some points of resemblance in plan and decorative character to No. 69 already noticed. The drawings include general plans (two alternative suggestions), a block plan of the Offices, according with the proposition in one of the general plans, and designs for the War-office and the Foreign-office, in two similar buildings, with arches and a carriageway between. One of the general plans offers an arrangement not based on the instructions, and proposing a *place* 700 feet in width, extending from the Abbey to the Nelson Column, and with semicircular ends. The Offices are proposed to be arranged on each side. In the other general plan, the author proposes to move Westminster-bridge opposite to Charles-street, placing another bridge at Charing-cross, to form a "New Westminster-square," opposite a wide approach to the bridge, and to prolong a "New Mall" through the park to the present Buckingham Palace, which he would give to the National Gallery, and build a new palace at Kensington. In the block plan, the Offices are arranged symmetrically, the present Board of Trade building being preserved. In the plan of the War-office, an outer hall, 47 feet by 36 feet, gives access, from Parliament-street, to a hall of 132 feet by 52 feet, ranged transversely, which has a staircase at each end, 28 feet by 25 feet. Arcades, and galleries with columns, surround this portion of the plan. Across the inner hall, another of similar character is entered at the end; and this hall contains two long flights of stairs to the first floor. With the halls and galleries, corridors communicate—generally well lighted from two open courts. The exterior shows a rusticated *sou-basement*, an arcuated ground story, with niches in the piers, and enriched spandrils (except in the towers or masses of the angles, where the arches are rusticated); a first floor with Corinthian columns, rich window dressings, and festoons; and in the floor over, enriched arch-headed windows. The angle masses, carried up a story higher, are like many other parts of the design, much enriched with sculpture. Escutcheons are suspended at the angles by festoons. The different cornices are crowned by balustrades, and the towers also by low domes. In the Foreign-office plan the arrangement is similar, as to the first portion of the building entered; but beyond the transverse hall is a wide staircase, with lateral galleries, by which last a connection is formed between the landing of the staircase of the residence and the corridors of the Office. The residence has two entrances, one in each angle tower, next the park; and the entrance halls are joined by a corridor, with columns, and 240 feet long by 21 feet in width; and off this, is the chief staircase to the reception-rooms above, near which is a grand reception gallery 277 feet long, and the same width as the corridor below. The chief staircase of the Office has Persian figures, supporting a waggon-headed vault, with ribs and coffers, and is lighted by lunettes.

No. 102, "Detur digniori," comprises a general plan, block plan, and drawings of the War-office and the Foreign-office, as portions of a general design. Westminster-bridge moved to be in line with the new Charles-street; and bridges at Charing-cross and the Horse-ferry: a new street crossing Dean's-yard to the Victoria-tower (with gates at the yard): the Westminster School removed to a site in a *place* formed south of the Victoria-tower; and St. Margaret's Church to a site due north of the Abbey transept, are contemplated improvements. In the block plan, the principal existing buildings are retained: archways crossing the *routes* are shown as prominent features; and from the centre of the western portion of the ground, a terrace, elliptical on plan, projects, with an archway and a building for the State Paper-office in the centre. As to the decorative design of the exterior, the Italian style is adopted; but an alternative design shows in certain parts, columns which are gigantic in proportion to the adjacent features, and discordant. We see many indications of the fevered excitement in which the preparatory work for this competition has gone on; and it is plainly to be inferred, that creditable as the majority of the drawings are, they do not represent the best designs that could be got from the authors, English or foreign.

The drawings under No. 103—"E lasciata Speranza"—which in many respects display considerable beauty of design, include a general plan, a block plan, and drawings of the War-office and the Foreign-office in separate buildings. Westminster-bridge, is proposed to be moved in line with Downing-street, which is, as in most cases, carried through to the park, and no bridge is provided northward. For the approach to the bridge, as shown, a portion of the offices of Montague House would have to be destroyed. It is certainly to be regretted that parties apparently *interested* in the questions of site for the Offices and communications should have been chosen as judges. At the present site of Westminster-bridge, steamboat landing-stairs would be constructed; and Inigo Jones's water-gate is proposed to be there placed. The plan provides for the removal of St. Margaret's Church, to the west of the Abbey; and the Chapter-house is thrown open. The parade of the Horse-guards is disposed on a regular plan, new buildings are added to the Admiralty, and the Mall is opened to Charing-cross, and enclosed by gates. A mistake of the arrangement proposed by the author of this design as to the Offices generally, is the recommendation of two different styles—Italian and the style of the Houses of Parliament—for different portions of the ground. The War-office and Foreign-office designs are in the former style. The plan of the War-office has four courts, divided from each other by corridors, and an octagonal hall in the centre, surrounded on each floor by ambulatories and arches on columns. The centre is carried up to a considerable height, and is domed over and crowned with a lantern. The chief front towards Parliament-street is remarkable for the treatment of its masses at the angles with truncated roofs rising higher than the general line, and curved inward on the face; for its two tower-like and spire-capped projections in the centre of the front; and for what is its best feature, its piazza between the wings, with projecting carriage-porch of columns and side-arches. The windows are peculiar, having several "orders" in the arches, and having labels and

* See p. 313, *ante*.

imposts, and shafts in the jambs. The frames of the windows are treated architecturally, as we apprehend they always should be, in preference to glazing with one or two sheets of glass. The Gothic style has especial advantage over the *nineteenth century* Anglo-Italian in this point; and it is thought by many, that the French casement in various forms, imparts by the effect in the windows, a general effect to the buildings of France, which we cannot hope to equal whilst we use the sash. It is curious as bearing on this point, that at Chatsworth, in the older building by Talman, the substitution of plate glass for very small panes with gilt sash-bars, did certainly not add to the effect. Entablature strings, and a Vignola cornice; panels between the windows and shields in the spandrils; to the angle masses, central features breaking forward and formed of clustered pilasters, columns, and niches, and terminated by a dormer; with ornamental chimneys; are amongst the ingredients of a design, which we have thought deserving of notice, as—without reference to any of its *merits*—indicating the possibility, eventually, of that habit of combination of materials from several styles, with fruits of new ideas, along with that general concurrence on the subject of style, which would serve both the production and the public appreciation of *art*, and which, all of them, as we believe, are required to set our architectural practice on the direct road of progress. The design for the Foreign-office has not quite the same kind of merit.

No. 104, marked "Pax," includes a general plan, a block plan, and a design for the Foreign-office. The site of Westminster-bridge is preserved, but with the additional width placed on the *down-stream*, or north side; there is a bridge approached from Charing-cross,* and one at the Horseferry. The coincidence as to the provision of three carriage routes in a space where there is now one, and where, we believe, not more than two had been suggested previous to our taking up the subject, is certainly remarkable. The author of the present design proposes to clear away the whole of the buildings between Whitehall and the park, except the Horse-guards and the Board of Trade. The design for the Foreign-office is not a bad one,—subject to this exception, that some of its forms and details are too obviously studied from Sir Charles Barry's Italian buildings,—as, for instance. Bridgewater House.

The author of No. 107 contributes a general plan, a block-plan, and a design for the two principal offices in a connected building. The site of Westminster-bridge is retained; Hungerford-bridge is widened, and a bridge is provided at the Horseferry; the Mall and Strand are connected; St. Margaret's church is moved; and the Law-courts are placed to the south of Henry the Seventh's chapel. In the block-plan there is a recessed quadrangle on the east side of Parliament-street; and otherwise, the usual arrangement is observed. In the War-office and the Foreign-office, the corridors, though they are described as well lighted, do not appear to be as described; for, there is a length of 85 to 90 feet with no appearance of lighting arrangements. The style is Venetian Cinque-Cento.—No. 108, with the motto,—

> * * * * res antiquæ laudis et artis
> Ingredior,

is a design for the War-office and Foreign-office, with a central quadrangle and archways. It errs greatly by the employment of uniform rustication over pilasters and wall surface, throughout each front.

A motto from "As you like it"—the words spoken by Orlando—"I come but in as others do, to try with him the strength of my youth," is attached to a design for the whole of the offices, in the style of the Banqueting-house. The number, 109, includes a general street-plan, a block-plan of the Offices, with general views and elevations, and designs for the War-office and Foreign-office, in symmetrical blocks. The author has gone into the subject with great care. The site of the new Westminster-bridge is proposed to be at "100 feet from the face of the present clock-tower—to the centre of the roadway; and the width of the bridge to be 85 feet," which is nearly the same as preserving the present site with an addition on the *down-stream* side,—as to the advantage of which arrangement, as well as the economy, we have so often expressed doubts. There is a bridge at the Horseferry; and that intended to serve the traffic from Charing-cross, is a skew bridge—placed starting from a point nearly opposite to the Banqueting-house, with curved approaches to it, around a *place* enclosed by gates—one approach commencing in Whitehall at a point opposite the south end of the Board of Trade, and the other from a *place* formed at the junction of Whitehall and Charing-cross. The Mall is joined to the south end of the *place* mentioned—instead of to Charing-cross *en route* for the Strand. Wings are added to the Horse-guards, ways to the park being left at the ends, and Dover House being removed. St. Margaret's Church it is proposed should be removed, and built to the north of the present site. The great additional width given to new streets by the authors of the best designs in the collection, shows a proper appreciation of the growing wants of London. The present author divides the traffic in his new Parliament and Bridge streets by dwarf-walling and groups of sculpture at convenient points. In the block plan, the general principle of arrangement is one seeking the effect produced by one comprehensive building—on the west side of Parliament-street at least. The author, however, as will have been inferred from the nature of the style, does not include the present Board of Trade in the arrangement here referred to, though he preserves that building. The ordinary division into blocks, which follows from the instructions as to the two principal offices, and from the position of Charles-street, is observed, as well as symmetry on the west side of Parliament-street; but the ends of the present streets, as Charles-street, are appropriated as *cortiles*, or archways, and built over so as to gain the central feature of the elevation; whilst, in the centre, is placed a tower, decorated with orders in two recessed stages, and crowned by a pyramidal capping. This tower could be seen from the chief points of view. Two other towers are placed on other portions of the ground. Amongst the drawings are good views of the quadrangle next Great George-street, of one which opens from Downing-street, and of Parliament-street, looking north, besides a view of the Foreign-office from the parade. These certainly place the capabilities of the style in a clear light; and the decoration of the internal courts—a point not to be disregarded as it has been by many of the competitors—has been studied both in the architecture, and by the introduction of groups of sculpture. In the War-office plan, it is right to say that corridors may be found, running for 80 feet without apparent lighting; but in many parts the decorative effect has been well studied, as in the staircases. In the Foreign-office there are two open courts (as there are also in the other Office), and the north-west angle is rounded off. The entrance to both Office and residence is at the south. The Office has a staircase to the park, in a tower between the new building and the State Paper-office, which last is preserved. The chief rooms in the residence look to the north.

We have succeeded in preserving a few other memoranda of the designs, and of the impressions which they made upon us; and shall in a future number proceed with our record. It happens that several meritorious works are placed in the order of the hanging, so as to come later into our notice than they otherwise might have done. The interest taken in the exhibition has, however, not subsided; and no doubt for many years—more than in the case of the Houses of Parliament—the designs which have attracted any attention will be frequently referred to.

* It may be well to state, that we have in all cases applied the designation of a site approached "from Charing-cross" to such bridges as had their approach suitable to the traffic from Cockspur-street. A bridge with approach anywhere on the east side of Northumberland House, should hardly be called a Charing-cross-bridge; though the present Hungerford-bridge has had that title.

CORRESPONDENCE ON THE WESTMINSTER DESIGNS.

IN my letter to you on the subject of Mr. E. L. Garbett's remarks on the Westminster Improvement Plans, I disclaimed any wish to enter upon a controversy, and his communication in your last number fully confirms my opinions on this point. I agree with the poet,—

> "Vociferated logic kills me quite,—
> A noisy man is always in the right;
> I twirl my thumbs, fall back upon my chair,
> Fix on the wainscot a distressful stare,
> And when I hope his blunders are all out,
> Reply discreetly,—to be sure—no doubt."

Far more congenial to my taste would have been the passive acquiescence above described,—but as E. L. G. has withdrawn what appeared to me his original charge, and substituted another in its place, I must crave the opportunity of making a brief reply to *that*.

He disclaims having charged us with choosing our style on the base, paltry, contemptible principle of its combining the least amount of work with the largest amount of pay,—nay, he gaily assumes that principle as his own, assuring us that it is the very one on which he always did work, and always intends to proceed. Be it so. The principle is still, to my mind, an ignoble one as applied to art, and I cheerfully resign it to him.

His present charge (divested of certain repulsive accessories, of which more hereafter) is, that he never thought us capable of selecting any style,—that the style has appropriated us,—and that without some such corrupt style, no such men could have existed, or would have touched a pencil. My own reply to this is,—my pencil was (what I trust it always will be) my joy and solace, long before I knew anything of architecture; and when I entered on my pupilage in that art (pure Grecian architecture being then the fashion, and the Mediæval revival not dreamt of), I instinctively turned to Gothic, copied all delineations of it with avidity, and examined its remains with delight; and a fortnight spent under the shadow of Tintern, exploring, sketching, and gazing with rapture on its majestic ruins, still stands out as the brightest spot in my artistic life. Nor will I yield to Mr. Garbett, or any one else, in earnest, hearty, reverent admiration and love of the exquisite relics of Gothic art. Here, however, I part company with him. I never felt the fervour for Chinese-like reproductions of it, or the still more mischievous mania for its (so called) restoration. To me, even its adoption for ecclesiastical purposes, without prodigious modification, is inconsistent with the pure Christianity of the Gospel, and its application to civil purposes is at variance with the dictates of my common sense and notion of the fitness of things.

I believe the age of Gothic architecture to have passed away, almost as entirely as that of chivalry, and in my eyes, he who sallies forth on his Mediæval hobby-horse, intent upon restoring it, whether he blazon on his banner the bold motto, "A vaillants cœurs rien impossible," or "Thou hast covered my head in the days of battle," is a veritable Don Quixote in the domain of architecture; with much, doubtless, of the true heart and gallant spirit of that redoubtable knight, but with the same unmistakeable flaw at the root of the whole performance. And to such true knight, I ween, Mr. Garbett is a right trusty and doughty squire (I crave pardon for being ignorant whether he has yet won his spurs on this bloodless battle-field), with much of the spirit of the immortal Sancho,—witness that unctuous adage, "A maximum of bread to a minimum of sweat," which has the genuine Sancho flavour.

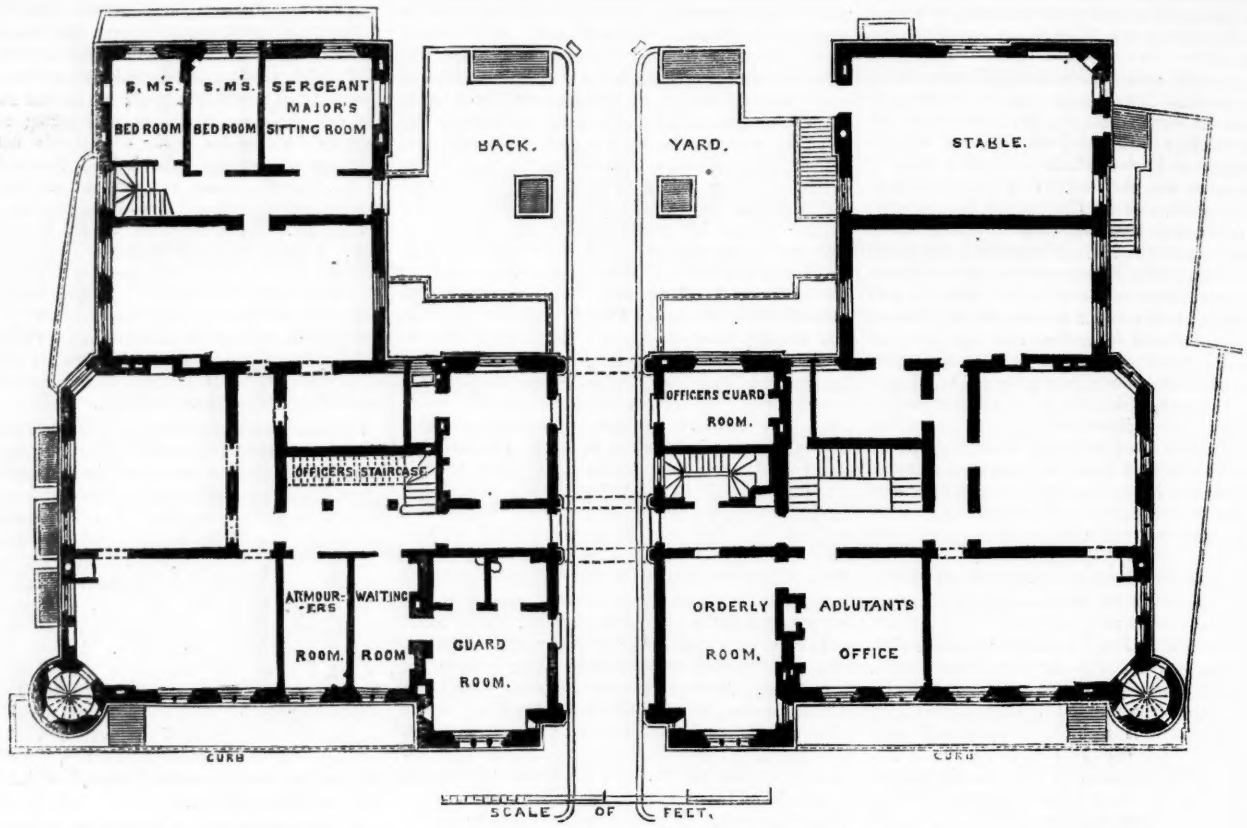
This is not the place to enter upon a statement of why I believe Italian architecture to be adapted to the purposes of our times; and your able correspondent Mr. Wightwick has rendered the attempt superfluous, by doing it ten times better than I could, in a paper which I earnestly commend to the study of "E. L. G."

Such is my plain reply to the twofold charge of Mr. Garbett. I do not say that I am right. Solomon tells us, "The way of a fool only is right in his own eyes," but I see nothing in the process by which I have arrived at my convictions, necessarily connected with "per centage," or at all analagous to "the choice of the immortal Hobson." It seems to me as clear and deliberate an exercise of the understanding as Mr. Garbett is capable of, and with just as hearty an appreciation of the beauties of Gothic architecture as he can lay claim to. As to the coarse illustrations which accompany his charges, the "dirt," "vermin," &c. &c. I presume these are meant to offend those whom his logic fails to convince. I can assure him they do not—cannot—offend me. My favourite poet supplies me with an ever ready shield against such assaults:—

> "An honest, sensible, and well-bred man, *will* not
> offend me,
> And no other can."

One word only as to Mr. Garbett's views on the present position of the architectural profession. He says, that I cannot have observed society much without perceiving that the "animus" displayed in his communications is that held towards me everywhere. I can assure him I never met with such an animus on *any* subject; nor do I expect to, within the pale of polite society.

By way of illustrating his views, he makes allusion, somewhat in the style of Mrs. Nickleby, to a certain speaker at some meeting, who observed that the very name of architect often "raised a hardly suppressed sneer,"—though what is the precise signification of that expression I cannot say. In my own experience of many years, and among almost all classes, I have ever met with respect, cordiality, and confidence,—a large measure of which I attributed to the profession of which I am a humble member rather than to myself. And when I look to the highest walks of that profession, I see such men as Sir C. Barry, Mr. S. Smirke, and the accomplished (reputed) author of No. 116, enjoying an amount of distinction and emolument more than sufficient, I dare say, to atone for the missiles occasionally hurled at them from less fortunate, but, as it would seem, more deserving rivals. But I have sufficiently "observed society" to know that in all professions there are men occupying positions far below their own estimate of their merits,—and such men look with a jaundiced eye upon the whole thing, and freely indulge in sneers (not of the suppressed kind). To such I would re-echo Mr. Garbett's words, "let them bide their time," but let it be in patience and silence. The wisest of men tells us, "He that hath knowledge spareth his words, and a man of understanding is of an excellent



PLAN OF THE DEPOT FOR THE PERMANENT STAFF OF THE ROYAL LONDON MILITIA.

spirit." With which sentiment I take my leave of Mr. Garbett, recommending it to his serious consideration. A COMPETITOR FOR THE BLOCK PLAN.

A correspondent says, with reference to some of our remarks last week:—"Not only must the careful impartiality and moderation of a criticism such as yours give it great weight with every unbiassed reader, but at the same time any one who is interested in the matter is placed more at liberty to offer explanation, than with those who, if they are more emphatic and brilliant in their decisions, are less painstaking and reliable. Now you seem to have been measuring our plans with a foot-rule: but this is surely more specious than conclusive; and when you tell us, for instance, that we go beyond the limits of the site, let it be suggested, first, that we had in a great measure to guess at the dimensions of that site from a printed map; secondly, that what is commonly called a sixteenth scale may not by any means bear the test of checking 600 feet by the foot-rule; thirdly, that some people's paper-straining would itself add 20 to 30 feet on this length; and fourthly, that the site itself is obviously capable of extension, practically, both in length and breadth. Moreover, when you speak generally of our 'departures from the instructions,' let it not be forgotten, that so little is this a fault, that in almost every prominent case of architectural competition it will be found that some happy improvement upon the necessarily crude idea of the instructions is the actual test of merit of a high class. If we go into the region of the impracticable, this is another thing; but when, for example, one transforms the site *in toto* for his 'royal way;' when another trespasses upon the Park, as you seem to think, and still another obliterates Downing-street, and so on, all this is honestly and practicably done for the best; and if it is to be described as 'clearly in defiance of the instructions,' then we must consider ourselves no longer as men of a noble art in '*grande certamen*,' but as school-boys in petty contest for a pedagogue's prize. Where a man *cheats*, mark him by all means; but where a man is honest, give him the advantage of this principle to the full; that designs must not be criticized like working plans—that they are but the jotting down of general ideas, and must be looked at accordingly—that there is a large volume of reconsideration intervenes between the mere project and the perfect work. And while I have pen in hand, let me be bold enough to speak for our good craft at large, and protest against that poor style of criticism which has already been too much listened to, whereby we are made to look like mean tricksters, tripping each other up because we are all so much in want of a hundred pounds or so. Nay, rather I will say, that I speak for almost every one, when I proclaim that we have gone into this contest, not for the sake of struggling for money or money's worth, but in the happy hope of standing, perhaps at a heavy cost, the last in the list, if it be no more, among those thirty or forty most honourable names which are to form the order of merit in this lordly game—rivals for a day, and peers for ever. Let us take high ground; for there are half-a-hundred of those works of ours, any one of which, twenty years ago, would have made a modest man's fortune; and it is a proud thing for an Englishman to walk up and down our great Old Hall, and think how triumphantly, in all that concerns the mighty craft of the Builder, old England stands upright among the nations."

I BEG to thank you for the evidently careful and impartial remarks (though they were not altogether laudatory) which you made upon my designs. It is very gratifying to a competitor to know that the ideas which deprived him of many a night's sleep are understood, and in some measure appreciated, by a competent authority. What I know to be true in my own case, I believe to be true with respect to the others, and, therefore, read with great interest the criticisms as they appear. You said, however, in last week's number, that, if the judges kept by the "instructions," the best designs would not be premiated: this is very much to be regretted, but it is their author's own faults. The "instructions" for designs 2 and 3 are perfectly clear and definite: the sites are distinctly defined, so that those who simply took as much additional space as they wished, *justly excluded their designs from competing*. Again, with reference to shadowing the elevations, the "instructions" say that they are to be "*in line only*," and no honest man, after reading the context, could understand it otherwise than that it meant "*in outline only*:" to say that shadowing *with lines* is permitted is a mere quibble, for it is evidently the same as China ink shadowing. I need only add that the advantages in favour of plans not restricted as to space and elevations, carefully shadowed, are very considerable over those of the competitor who honestly kept by the "instructions." A COMPETITOR.

ROYAL INSTITUTE OF BRITISH ARCHITECTS.

AT the ordinary general meeting, held on Monday, the 1st June, 1857, Mr. J. B. Bunning, V.P. in the chair, various donations were announced, and Mr. G. G. Scott, V.P. gave a brief explanation of a set of drawings of Edington Church, Wilts, prepared and exhibited by Mr. Vernon W. Arnold, architect, of which he spoke with much commendation.

The following paper was read:—"Some Remarks on Domes," by Mr. T. H. Lewis, Fellow. Mr. William Wigginton was elected as Fellow.

The closing general meeting will be held on Monday evening, the 15th instant, when the following papers will be read—"Some Description of the Mechanical Scaffolding used at the new Palace at Westminster, particularly in reference to the three main Towers of the Building," by Mr. Charles Barry, jun. Fellow: and a short notice on Stamped or Incised Stucco, by Mr. B. Ferrey, Fellow.

DEPOT FOR THE PERMANENT STAFF OF THE ROYAL LONDON MILITIA.

THE building erected in the City Road for the London Militia, became necessary in consequence of the old head-quarters, at the corner of the artillery-ground in Bunhill-row, having been occupied by the church and parsonage-house; and as the militia had a right to the use of a portion of the artillery-ground for exercise, it was determined to secure the remainder, with a site adjoining, for the depôt.

The building is not in any respect a barrack, but consists of eight rooms on the top story for infirmary, &c.; thirty-nine rooms on the second floor for non-commissioned officers and their families; on the first floor, twelve rooms and mess-room for non-commissioned officers, adjutant's quarters, commanding officer's quarters, officers' mess-room, reading-room, washing-rooms, and others.

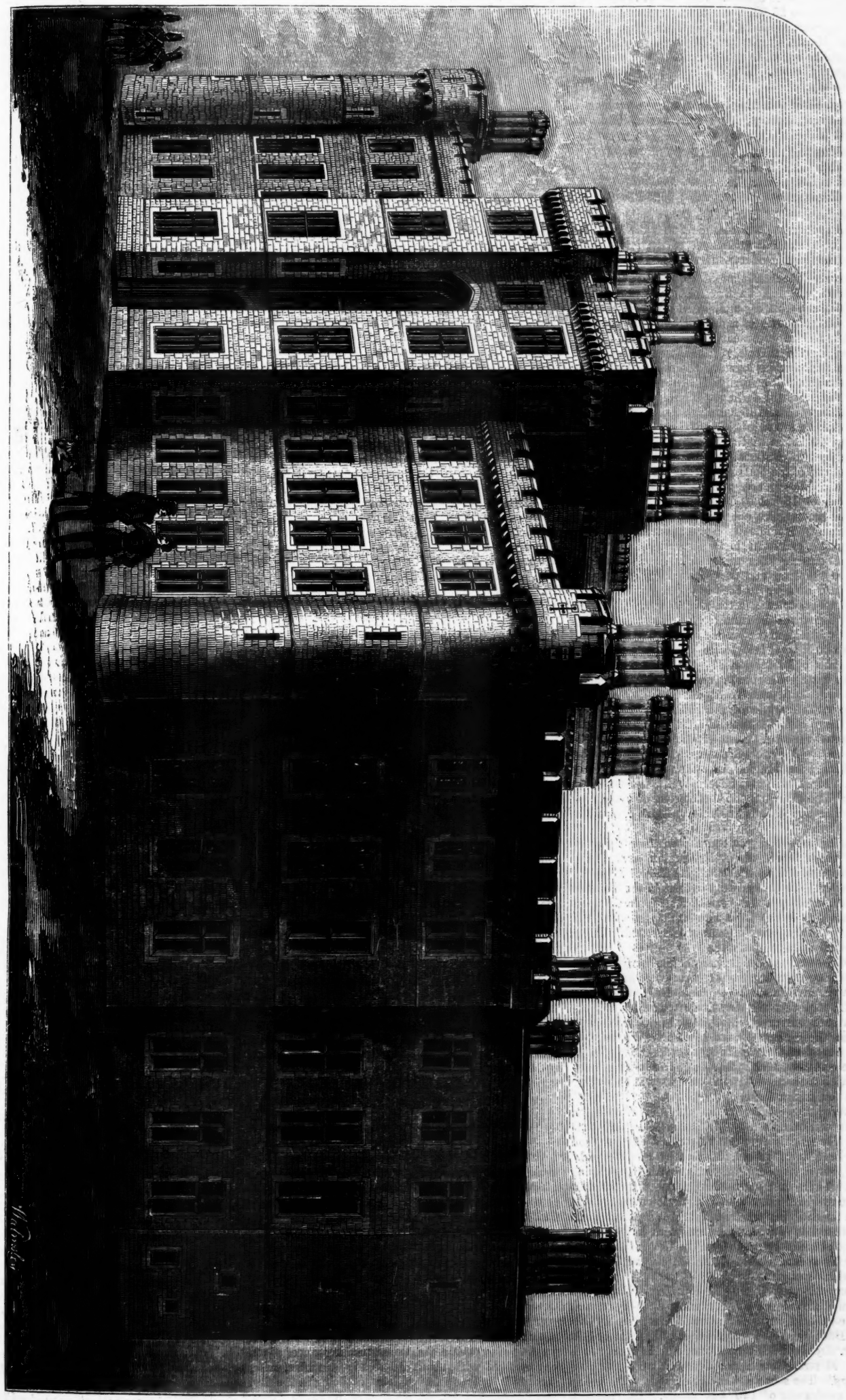
The ground story contains the guard-rooms, armouries, adjutant's office, waiting-rooms, room for examining recruits, serjeant-major's quarters, and officers' stables.

The basement contains the kitchens, wash-houses, and various conveniences required when the militia is called out for training. The building has three fronts faced with rag and Portland stone—the fourth is of brick.

The corporation of the City, as such, have nothing to do with the militia, which is entirely under the management of the commissioners of lieutenancy, who are appointed by the Crown. The aldermen and deputies are *ex-officio* members of the commission; and the directors of the Bank of England, East-India Company, and South-Sea Company, have always been put on the commission, with such other merchants connected with the city as may be thought desirable.

The depôt is paid for by a rate called a trophy-rate, levied by warrant from the Crown, but the men, we are told, are paid by the Crown, and all the arms and ammunition on the premises are the property of the Crown.

The whole of the floors are fire-proof, with iron joists of Fox and Barrett's patent. A contract was entered into with Mr. Jay at the end of November, and as soon as the weather permitted, the work was commenced, and has been carried on with the utmost practicable rapidity. Mr. Jennings is the architect.



DEPOT FOR THE PERMANENT STAFF OF THE ROYAL LONDON MILITIA.—MR. JENNINGS, ARCHITECT.

PROVINCIAL NEWS.

Norwich.—At a recent committee meeting, the tenders for the new workhouse, according to the plans approved, were opened. They varied in amount from 20,000*l.* to 25,000*l.* and some were sent in by several Norwich builders and a Lynn firm. The tender of Messrs. Curtiss and Balls being the lowest, the committee agreed to recommend it to be accepted by the general court. The site selected is near the new cemetery.

Dudley.—The following tenders for the new schools in King-street, Dudley, Mr. Nichols, architect, have been sent in :—

Beddoe	£789 0 0
Harley	700 0 0
Cox and Son	682 4 0
Holland and Son (accepted)	652 13 0

Shrewsbury.—The East-India Company have resolved to appropriate the sum of 500*l.* towards the erection of a suitable monument of the great Lord Clive in the town of Shrewsbury.

Malvern.—The foundation-stone of the new schools at Malvern was laid on 3rd inst. by Lady Emily Foley, instructed, as a pupil, by the Grand Master Mason of the province, assisted by grand officers of the craft, and in presence of the assembled lodge. The land for the schools, residence, and playground, is three furlongs in extent. Something less than half of the area will be occupied by the buildings and yards: the rest will form an open space in front. The building will be 160 feet from end to end. The plan contains a mixed school in the centre, 88 feet in length by 40 feet in width, the parallelogram broken in upon by two class-rooms, each 18 feet by 14 feet. The west end of the building is occupied by the infant school, which has an area of 55 feet by 28 feet, and a class-room of 18 feet by 14 feet. The school-rooms and class-rooms have open roofs. At the west end are residences for a married couple, as teachers of the mixed school, and for a single person who is to teach the infant school. The mixed school will accommodate 300 scholars, and the infant 200, allowing a square yard of floor to each in the large school, and 7 feet 6 inches to each in the smaller one. The style of the building will be Gothic, with numerous gables, and many breaks in the outline of the walls and roofs. The walls will be of brick, with Bath stone dressings, and the roof of Broseley tiles. Each of the principal windows has a gable above it, and there are ventilating turrets, with octagonal roofs, above the schools, in keeping with the style of the building. The height of the large school is about 26 feet from the floor to the apex of the roof. That of the infant school is about 30 feet. The residences, being two stories high, have a still higher roof than the rest of the edifice. Mr. Davis, of Malvern Wells, is contractor for the building at 2,435*l.* exclusive of boundary-wall. The architect is Mr. E. W. Elmslie, of Malvern.

Brislington.—The gentlemen promoting the erection of the new schools at Brislington, have chosen the designs of Messrs. Pope and Bindon, of Bristol.

Alcester.—The Board of Directors of the Alcester new corn-exchange met on 4th inst. to decide upon the plans sent in for their new exchange, when the design by Mr. Edward Holmes was selected. There were twenty-one competitors.

Rugby.—The town-hall shareholders have resolved that their directors be empowered to enter into a contract with Mr. Gascoigne to build the town-hall for 3,073*l.*; and that the directors be empowered to expend a sum not exceeding 3,500*l.* in the whole, and to raise the amount by mortgage or otherwise. It was also resolved that a clerk of the works be appointed for the company. The work has already been commenced, but there will be no ceremony at the laying of the foundation stone.

Horsington.—The designs for the Horsington schools were furnished by Mr. Henry Hale, of Islington. The schools were erected for 150 children, and comprise a boys' school, 30 feet by 18 feet; girls' school, same size, communicating with large sliding doors. There is a class-room, 20 feet by 12 feet, common to both schools, and separate entrance, with places for caps, bonnets, &c. The cost has been 800*l.* more than half of which has been raised in the parish, the rest obtained by grant from the Council on Education. This sum does not include the value of the site, which was given.

Newcastle-upon-Tyne.—The opening of St. Mary's Roman Catholic schools, Newcastle-upon-Tyne, took place on the 1st inst. The ground was given by Mr. Wm. Dunn, and the schools were built from designs by Mr. Archbold Matthias Dunn, of this town, architect. Messrs. Gibson and Howard were the contractors. The schools, when completed, will form an open quadrangle of 150 feet across. The masters' house, containing accommodation for two masters, with a bell-turret attached, occupies the centre; the boys' and girls' schools forming the wings at either side. In addition to the masters' house, the boys' schools only are completed, consisting of two school-rooms, 80 feet by 18 feet, and 47 feet by 18 feet respectively, opening into one another at right angles, with folding-doors, and two class-rooms attached, each 27 feet by 15 feet, the whole with open timber roofs, stained and varnished. The masonry of the building is block walling in irregular courses, from 4-inch to 7-inch, scappel-faced, and pointed with dark mortar. The roofs are covered with Welsh slates, and finished with an ornamental ridge designed for the building. The accommodation afforded at present is for 500 boys, and when finished, there will be the same amount of accommodation for the girls.——The contract for the new Reformatory School at Netherton has been let to Messrs. Ivison and Welton, of this town.

Bathgate.—Plans of the corn-exchange about to be erected in Bathgate are being exhibited in the town. Between two shops, as described in the *Falkirk Herald*, is the entrance to the corn-exchange: above the two shops is a hall, lighted from the front by five windows, and on the top of the building is to be a balcony, with ornamental balustrade. Immediately at the back of the exchange, lighted from the top, is a hall, 52 feet 7 inches in length, by 39 feet in breadth, in which the ordinary business of a market day is to be conducted. At the back of this hall there are six small rooms, and on the right is a grain store. The building is after a design by Mr. A. M'Gregor, of Edinburgh, architect.

CHURCH-BUILDING NEWS.

Ipswich.—The first stone of a new Congregational chapel in Tacket-street, Ipswich, was laid on 29th ult. It is upon the site of the meeting-house erected in 1720. The contract price of the building is 2,700*l.* Mr. Whight is the builder, and Mr. Frederick Barnes the architect. The style is Decorated.

Datchet.—The works in connection with the enlargement of this church have been commenced. Upwards of 1,600*l.* have been promised, but there is still a deficiency of 400*l.* which is guaranteed by Mr. Hall, the vicar, in case it be not made up by subscription.

Dorchester.—In St. Peter's Church an antechapel has been built for the organ, which will no longer hide from view the monument of Sir John Williams, of Herringston, in the Herringston aisle. The work has been executed by Mr. Wellspring, under the superintendence of Mr. J. Hicks, architect, both of Dorchester.

Crich.—The foundation-stone of the new church about to be built at Wessington, in the parish of Crich, has been laid by Mr. Edward Radford, of Tansley-wood, near Matlock. The plans of five architects were sent to the committee, and Messrs. Hoskton and Son, of Sheffield, were the successful competitors. The estimated expense is 2,250*l.* of which 1,980*l.* have been already subscribed.

Walsall.—The chapels in the centre of the new cemetery, designed by Mr. Clark, the borough surveyor, approach completion, and except the central spire, the material is brick, faced with white stone. The design is Early English. The new burial-ground extends to about thirteen acres, eight of which will be appropriated to the Established Church, three to the Dissenters, and the remainder to the Roman Catholics. It is being laid out under the superintendence of Mr. Cole, of the firm of Cole and Sharp, nurserymen.

Malton.—The restoration of St. Michael's Church, Malton, has at length been begun. Preparations are being made for pulling down the chancel, which is to be entirely rebuilt. The alterations are from plans by Mr. Chantrell. The subscriptions amount to upwards of 900*l.* the estimated cost being 1,000*l.*

THE NAUTILUS, OR IMPROVED DIVING-BELL.

ON Tuesday there was a large muster of the scientific world at the Victoria Docks for the purpose of witnessing some experiments as to the capabilities of this new and effective machine, and which were of a most satisfactory nature, as showing the complete control under which it would be in submarine works, and that, too, at the will of the person descending, the whole of the ascending and descending power being regulated from within, and not as in the old diving-bell, dependent on the persons left on the surface, the agents being, of course, air and the water. Apart from this great desideratum and safeguard from accident by interrupted communication, the machine also serves the purpose of its own crane, the suspending power of the one operated with, about 10 feet in diameter, being equal to 7 tons, so that guide-ropes being in the first place fixed, a block of stone may be taken down, directed over its proper bed, and placed in the position required under the one operation. At the *déjeûner*, Mr. Robert Stephenson, M.P. bore willing testimony to the theoretical value of the invention, and to the perfectness with which it had been carried out, while Mr. Bidder, the engineer to the docks, stated his entire satisfaction, practically, some work having been accomplished through its agency in a space of two days and two hours, that would have taken, under the old system, more than three weeks. Among those who took notice of the experiments were Messrs. Locke, M.P., Vignolles, C. Manby, Scott Russell, John Leslie, Sir S. M. Peto, &c.

THE MANBY TESTIMONIAL.

THE members of the Institution of Civil Engineers had, for some time, entertained the intention of acknowledging the services of Mr. Charles Manby, as their paid secretary during eighteen years; and advantage was taken of the opportunity of his retiring from that post to carry this intention into effect. A committee was accordingly formed, and in a very short period upwards of 2,000*l.* were subscribed, with which it was determined to purchase a fitting testimonial and to present the balance in cash. The ceremony of presentation took place in the theatre of the Institution, on Saturday, 23rd May, in the presence of a large assemblage of the members and of Mr. Manby's private friends.

Mr. Robert Stephenson, M.P. the president of the Institution, took the chair, and Mr. Bidder, as treasurer of the fund, explained that, owing to the eagerness with which their call was responded to, the duties of the committee had been comparatively light. The amounts subscribed varied from half-a-guinea to 100*l.*; and up to the present time there had been received 2,019*l.* 10s. from 417 subscribers, of whom 358 were members of the Institution, and 59 were the private friends of Mr. Manby; but as many more subscriptions had been announced, the accounts would not be finally closed until the publication of the list of the contributors to the testimonial.

The testimonial consisted of a timepiece and a pair of candelabra supplied by Messrs. Howell and James, and the sum of 2,000*l.*

Mr. Manby, in thanking the subscribers, asked as a favour to be permitted to devote a portion of the amount of the testimonial to establishing an annual premium which should bear his name. The engineers, he added, were the only professional body not possessing some kind of a mutual aid society. Would it not be possible to originate some plan for thus doing good? His time and means might be freely commanded, and he should feel happy in devoting to such an object a further portion of that which had been so generously placed at his disposal.

Amongst the speakers at the meeting, besides Mr. Stephenson and Mr. Bidder, were Mr. Locke, M.P. Mr. Field, Mr. Forrest, Mr. Glynn, and Mr. Scott Russell, which last gentleman incidentally stated that three-fourths of the 700,000*l.* of shares in the *Great Eastern* ship undertaking were held by members and associates of the Institution of Civil Engineers,—a fact which spoke volumes for the safety of the structure.

THE VICTORIA MILITARY HOSPITAL, NETLEY.

IF the statements made both in the House of Commons and the public prints be correct, others have now discovered, somewhat late, the fatal errors in the plan of the Victoria Hospital, which were pointed out by us, unwillingly, but with a strong sense of duty, in the autumn of last year, when we published a view and plan of the proposed building.*

We referred to mistakes which had been made, especially "to the placing of the baths and the latrines together, and the position of the latter between sick wards," and maintained that, "should the proposed arrangement be carried out, whenever this hospital shall be full of patients, *more disease will be generated there than cured.*"

What do we hear now? In the course of a debate in the House of Commons last week, Mr. Stafford affirmed that the building was "being constructed in defiance of all those sanitary precautions which our bitter experience in the Crimea ought to have taught us." And in the *British Medical Journal*, of the 30th of May, we find it stated that, "This imposing building, calculated to hold one thousand patients, having just emerged from the ground to a sufficient height to show its outlines, and having absorbed 70,000*l.* of public money, is stopped by order of Government, and now stands in the open day a conspicuous engineering blunder, calculated 'to point a moral and adorn a tale' to all those who believe in the efficiency of our army medical government."

The writer repeats our assertion almost in our own words, that "the Netley Hospital as at present devised *will kill more patients than it will ever cure.*" We have shown that hitherto all our hospital wards

* Vol. xiv. pp. 458, 510, 544, &c. &c.

have been treated as though they were mere sleeping-rooms; and as if the usual means of ventilation necessary to remove air simply rendered impure by healthy respiration were sufficient to change the hospital atmosphere charged with the thousand impurities which are given off from the bodies of sick patients. "In order to keep the air of sick apartments sweet, two things must be attended to: in the first place, each ward should be thoroughly ventilated in itself by means of open fireplaces, opposite windows running to the top of the room: secondly, each ward should be entirely separated from its neighbours. The interior of a hospital should be treated, with respect to atmosphere, as an iron ship is with respect to water—so divided into compartments that the element, when deleterious, may be confined within its own bounds, and not allowed to bring destruction into adjoining ones. On this plan the great Military Hospital at Bordeaux [of which we gave an engraving] was constructed, some thirty years ago; and on this beautiful plan nearly all similar establishments have been erected in France, and even in Belgium."

"If any man wishes to ascertain for himself the errors that have been committed at Netley, he has only to consult the plan. All the wards communicate with one common corridor, which will serve as a pipe to conduct the contaminated atmosphere of one ward to the comparatively pure air of its neighbour. It would seem that this vital error was not sufficient: the *latrines* also communicate with the wards; hence we have a double source by which an 'hospital atmosphere' is provided for."

Returns in connection with this structure have been moved for in the House of Commons, so that we may hope before long to learn the exact state of affairs. The returns should include a plan of the building as now determined on.

LONDON BURIAL-GROUNDS.

THE TOTTENHAM-COURT-ROAD CHAPEL GRAVEYARD.

In the Rolls Court on June 5th, judgment was given in the case of Moreland *v.* Richardson. The plaintiffs claimed to be entitled through their ancestors (who purchased it more than twenty years ago) to the right of burial in the graveyard. It appeared that the trustees or deacons of the chapel have, since the passing of the Act for the closing of the London graveyards, removed the tombstones from the graves of the plaintiffs' ancestors. This was thought by the plaintiff an unwarrantable insult to the memory of the deceased relatives, and an injunction was obtained to restrain the proceedings of the deacons or trustees of the chapel in this respect, and the present motion was that such injunction should be made perpetual. The Master of the Rolls held that it had been established, to his entire satisfaction, that the defendants had improperly interfered with the rights of the plaintiffs in the burial-ground in question, which the Secretary of State had made no objection to, or in any way interfered with. After a very careful attention to the facts and arguments on both sides, that was the conclusion he had arrived at. The injunction would therefore be made perpetual, to restrain the defendants from interfering with the burial rights of the plaintiffs or any members of their families in this churchyard, which was not objected to under the Act by her Majesty's Secretary of State. It will be seen by the above statement that it is illegal for the managers of graveyards to remove the monuments, and also that, in such burial-grounds as have not been formally closed by order of the Secretary of State, parties having claim to ground can demand the reopening of the graves for fresh interments. This is a matter which requires the careful consideration of the Government authorities, for the reopening of graveyards as thickly occupied as that in Tottenham-court-road might cause much mischief. We are glad, however, of this acknowledgment of the right to preserve the monuments, and hope that those interested will, in case of necessity, interfere and prevent such cases of spoliation as we have been obliged to notice.

THE TRUE BASIS OF SANITARY PRINCIPLES.

In your last number you have introduced what is there called a "Sanitary Fact." Let this be rightly understood. Your publication is not the arena for the discussion of medical questions; yet, in the construction of public hospitals, a knowledge of the value of ventilation is highly important, as well as the arrangement of a perfect system of sewers. In these all-important points we shall not attempt to dictate to the ingenuity and skill of the architect: we shall only point out one or two facts, which will be useful, as proving the necessity of a careful consideration of ventilation and sewerage.

Fever hospitals are an error in principle, and tend to encourage prejudices: they accumulate a number of diseased subjects together, which vitiates the atmosphere, and causes a serious disadvantage to the sick. The writer of this has been nearly thirty years a physician to the largest provincial public hospital in the kingdom, where all cases of typhus fever are placed indiscriminately among the other patients in beds only 2 feet apart, yet no instance has ever been known in the course of a whole century of the disease affecting the next person, who has been constantly living and sleeping within 2 feet of the typhus disease. This is purely the effect of ventilation and cleanliness. A few words more of explanation will show the truth of this fact,—typhus fever is produced by a *malaria* and not from *contagion*. The respiration of air contaminated by the admixture of gases which are produced from the decomposition of vegetable matters causes ague or typhus fever (diseases which often pass from one to the other): when the respired air is contaminated with the gases which result from the decomposition of animal matters, it causes a violent diarrhœa. The mucous surface of the air passages is as susceptible of being poisoned as is the mucous surface of the stomach. Those fevers termed *gastric* are a distinct class of diseases. A gastric fever is nothing more than an inflammatory state of the lining surface of the bowels, which is disposed to run into a state of ulceration or sloughing. This form of disease is easily cured by those who understand it.

When the air is intermixed with foreign matter, it becomes specifically heavier than pure air, and will, therefore, gravitate to the lowest situations, and will stagnate in a hole like water. The ventilation of all low and confined places becomes proportionately difficult, and requires skill and practical experience to expel the heavy vitiated atmosphere.

The philosophy of organization ought to be cultivated as a part of polite education by all well-educated men: it would be productive of great benefit to the community, and would dissipate much of the prejudices and follies of mankind. W.

THE HANDEL FESTIVAL AT THE CRYSTAL PALACE.

This musical congress, the greatest ever yet assembled, will take place on Friday in next week, and owes its existence to the anxiety of the Sacred Harmonic Society of London to promote by their example the commemoration, in 1859, of the Centenary of Handel's death in such a manner as would be alike worthy of the Great Master and of the widely-diffused musical knowledge of the present day.* In carrying out this object, it was found that the central transept of the Crystal Palace offered a *locale* for this display far beyond any other existing building. The space appropriated to the orchestra alone occupies a clear area of 168 feet in width by 90 feet in depth. This extent exceeds the entire capacity of any other music-hall in this country, and has the additional advantage of great height and of ample means of approach and for general arrangements. The orchestra, which has been constructed in a somewhat flattened curve, rises from the floor at a front elevation of 8 feet, and is from thence continued in a series of semi-circular steps, varying from 10 to 15 inches each, to a total height of 47 feet. These rises are thirty-four in number, of which eleven are appropriated to the band, and the remaining twenty-three to the chorus. The band consists of 385 performers in all, who are arranged at 202 desks. The chorus, originally intended to consist of 2,000 voices, slightly exceeds that number. The entire orchestra, therefore, is, as near as possible, 2,500. The great organ, erected by Messrs. Gray and Davison, of New-road, is itself an unprecedented construction. In the centre, between the organ and the band, the large drum made by Mr. Distin for the Festival, will be a conspicuous object. It is between 6 and 7 feet in diameter, and, when gently struck, produces a tone resembling the booming of a deep pedal-pipe. We need hardly claim for this festival the support of all lovers of music throughout the country.

* An account of the intended Festival has been published in the form of a Letter, addressed to the members, subscribers, and assistants of the Sacred Harmonic Society. A lithographed plan of the orchestra has also been published.

CHISWICK GARDENS.

The *fête* at these justly celebrated gardens last week was more what such a meeting ought to be than any one which has yet been given, either there or elsewhere.

An addition—and a most useful one—to the display of marvellous flowers and magnificent fruit was made in the exhibition of horticultural implements and appliances; and we were glad to see that many ladies, as well as members of the more agricultural sex, appeared interested in it. Several conservatories were temporarily erected, and filled with plants, to show the effect when complete, and the price of each was given; a commendable practice that will lead to the extension of artificial cultivation.

We noted several marked improvements in construction, produced by a judicious combination of iron and wood, by which greenhouses are rendered much lighter and more elegant in appearance, than of old.

One method of opening and closing all the sashes simultaneously by means of a lever was also worthy of observation: this system might, perhaps, be applied with advantage to schools, hospitals, and churches.

On the green sward, several tents were pitched, offering useful suggestions for future necessities: the umbrella-tent, especially, seemed to combine the desirable qualities of being portable, spacious, and secure.

With regard to the flowers, too much cannot be said; they were beyond and above praise. The mode adopted in one tent, of breaking the too gorgeous line of brilliant colours by a bed of sober dark-green exotic plants and ferns, gave great relief to the eye, and should, on physical grounds, be more frequently adopted.

It struck us that the too extensive aggregation of bright colours, without an occasional rest—so to speak—of cool, green foliage, does great injustice to many of the marvellous blooms with which most of the plants were literally covered.

The heavy showers which drenched the London streets on that day, fortunately did not extend to Chiswick; and though the low temperature had induced many of the ladies to discard their light summer dresses for richer and warmer costumes, the toilettes were elegant and appropriate, and did no dishonour to the perfection that pervaded the gardens.

One thing only we missed—the delicious perfume that, of old, the recently-mown grass used always to exhale: but perhaps, on account of the previous dry weather, the grass was too short to cut; though the multitudinous daisies would have been better away. However, that is a trifle only worth mentioning to show how perfect was everything, when this was all with which fault could be found: and we most heartily wish success may attend the renewed exertions of the Horticultural Committee.

Admire as we may the beauties of Sydenham, and luxuriate in the proximity to London of the Botanic Gardens, we must ever remember with gratitude, that to Chiswick and its enterprising managers and originators we are indebted as being the pioneers in the once difficult path of horticultural importation and development, in which so many followers now tread with ease, thanks to their previous exertions.

THE COMPETITION DESIGNS FOR LONDONDERRY BRIDGE.

Sir,—The following questions are being very generally asked, among the members of the profession of civil engineers, with reference to the late competition for designs for this bridge.

Is it true that Sir William Cubitt gave himself very little trouble about the matter, and handed over the examination of the designs to a gentleman who, however respectable as a mechanical engineer, has neither knowledge nor experience as a civil engineer?

Is it true that the first prize was awarded to Sir William Cubitt's drawing-clerk?

Is it true that the same gentleman who has obtained the first prize was employed some years since by Mr. Charles May, of the Permanent Way Company, to make a design for Londonderry Bridge, which design of Mr. Charles May resembled closely in its leading features that to which the first prize was awarded in the late competition?

Is it true that the holder of the first prize having, through Sir William Cubitt's influence, obtained an appointment in India, Mr. Peter William Barlow, of the Permanent Way Company, has been selected to make a design, under Sir William Cubitt's directions, to the exclusion of all the other competitors?

Is it true that Mr. Peter W. Barlow brought forward the design that he has prepared, at a recent meeting of the Institution of Civil Engineers, and that the principle of the design was condemned by the first authorities in the profession?

Is it true that this design is, notwithstanding its defects, being forced on the bridge commissioners on the plea of economy, though the estimate has never been submitted to any proof?

Is it true that a large number of gentlemen were induced to compete for the premiums offered by the Commissioners, on the faith of the terms named in the advertisement for designs, and from confidence in the high character of Sir William Cubitt, who was appointed umpire, and that these gentlemen now complain, with reason, that the statements made in the advertisement have not been adhered to, and that what was called a public competition has been perverted to the private advantage of a few individuals?

C. E.

RECENT PATENTS.*

STEWART, R. — *Improvements in Cutting Stone and other Mineral Substances.* Dated July 25, 1856. (No. 1,769).—A sole or bed is laid down, and a carriage carrying the cutting tools traverses upon rails upon the sole or bed, being supported upon wheels, toothed to gear into racks upon the rails or sole. The cutting tools are arranged in a line one behind the other, and each tool is fitted into a socket in the lower end of a vertical or slightly inclined bar, capable of sliding easily in guides attached to the carriage framing. The cutting action is made to take place by raising and letting fall this bar. The bar is lifted by a socket piece embracing it, and which has jointed to its inner side a short lever or eccentric piece, which grips the tool bar when the lifting action takes place, taking hold of it higher up as the cut gradually deepens.

CHIPP, T. J. and R. BITMEAD.—*Improved Apparatus for Drilling and Boring.* Dated August 22, 1856. (No. 1,959). — The patentee describes an apparatus designed as a substitute for the clamp and weighted beam or lever usually employed to support the upper end or centre of the brace or boring bar in drilling or boring by hand, but it requires engravings to illustrate it clearly.

HOLCROFT, G. and P. JOHNSON.—*Improvements in the Manufacture of Cement, and in the Application of a known Material to Cementing Purposes.* Dated July 31, 1856. (No. 1,805).—This consists in manufacturing cement of sulphur combined with sand, gypsum, &c.; also, in the application of sulphur alone for cementing the joints of stones, or as a general substitute for cement.

MENNONS, M. A. F.—*A New Composition, applicable to the Coating or Covering of Metallic and Non-metallic Surfaces.* (A communication). Dated August 25, 1856. (No. 1,976).—This consists of a composition applicable to the coating of walls, partitions, steam-boilers, &c. The patentee takes argillaceous clays of different kinds, and containing aluminia. These clays are kneaded with water, and to the mass he adds in succession to 100 parts of clay, oily substances, or residues, 6 parts; oil sediment, 5 parts; fat, 2 parts; animal charcoal, 2 parts; vegetable charcoal, 2 parts; mucilaginous substances, such as glue, &c. 1 part; wood saw-dust, or ground wood, already employed in the purification of oils, or in drying processes, 10 parts; waste hair, well beaten, 4 parts. To this he adds a decoction of logwood, treated with nitrate of iron (to deepen the colour), together with a small proportion of soot. The whole is thoroughly mixed and brought to the consistence required.

FERRY, BENJAMIN, Trinity-place, Charing-cross.—*Producing Ornamental Plastering or Stucco Work.* Dated Oct. 27, 1856. (No. 2515).—This invention consists in so performing such work that indented or impressed ornamental patterns are obtained on the surfaces as the plastering proceeds, and whilst the materials are still sufficiently plastic to admit of the desired impressions or indents being made. For this purpose ornamental pattern-plates are formed with the pattern cut through them, similar to stencil-plates, but sufficiently strong to admit of their being pressed into the finishing coating of plaster. The edges of the pattern are inclined.

BRODIE, WILLIAM, Belhaven. — *Roofing Tiles.* Dated October 27, 1856. (No. 2524).—In making roofing tiles according to this improved system, the clay or other plastic material is suitably prepared in a pug-mill or other apparatus, from which it is made to exude through a die of a horse-shoe form. The issuing horse-shoe-shaped stream of clay is cut into lengths by any suitable apparatus, such as is used in drain-tile machines, the lengths so cut forming blanks to be subsequently moulded in the finished roofing tile. The finishing operation is effected by means of a frame arranged to turn or swivel upon a vertical axis, and fitted with two mould plates at diametrically opposite points.

GEFFREY, WILLIAM, Glasgow. — *Apparatus for Sawing or Cutting Wood.*—Dated Oct. 17, 1856. (No. 2429).—This invention relates to an arrangement of traversing circular saw for cross-cutting timber with rapidity and accuracy, as well as to a contrivance of a saw-table or bench for insuring accuracy of cut. The driving connections for the traversing circular saw are wholly of the belt pulley kind. The sawing-table, as fitted up for a stationary circular saw, has upon it a horizontal slide piece set in a recess running in a line parallel with the saw's disc. The further end of this slide has a graduated ledge piece upon it, set accurately square, so that when the operator has to saw a board, he presses one square end against this ledge, and the slide is then traversed forward to bring the wood into cut in an accurately straight line. A counterweight is attached to the end of the slide, so that it returns to its original position in readiness for the succeeding cut.

* Selected from the lists published in the *Mechanics' Magazine, Engineer, &c.*

MCDOWALL, JOHN, Johnstone, Renfrewshire.—*Sawing or Cutting Wood.* Dated Oct. 17, 1856. (No. 2430).—This invention relates both to plain straight cut sawing, and to differential sawing for curved work, such as ships' timbers. As regards straight cutting, the apparatus employed according to this invention consists of a contrivance whereby a series of saw-frames may be simultaneously worked from one single prime mover, whilst provision is made for the occasional disconnection of any one frame without disturbing the action of the rest.

FALL OF THE NEW (R. C.) CATHEDRAL AT PLYMOUTH.

A large building, exceeding in size most of the churches recently erected in this neighbourhood, and intended as a Roman Catholic cathedral, has been of late in course of construction at the corner of the road leading from Eldad, into Cecil-street. It had so far advanced as to enable the architect, Mr. Hansom, of Bristol, to fix the 4th of August next as the period for its consecration. The edifice was completely roofed in, and the interior fitments were being proceeded with, but on the 3rd inst. an accident occurred which will occasion both delay and expense. The church was formed with side aisles, and from one end to the other the roof, which was an extremely lofty one, was supported by arches which sprang from pillars. These pillars were formed of Bath stone, and the arches springing from them were of brick. On Tuesday in last week some defects were observed by Mr. Roberts, the builder, in the southern arch of the nave, which caused him to telegraph for the architect to come down immediately. That gentleman at once left for Plymouth, and on Wednesday morning he inspected the building, which he found in a very unsafe condition, so much so as to render immediate steps necessary to secure it from falling. The Bath stone it appeared had proved too weak for the weight which it had to sustain, and some of it had split, and was thus endangering the whole structure. A number of men were set to work to shore up the arches of the nave, previously to removing the defective work, which was found to be immediately over the piers, and consisted of brickwork and limestone. Before the measures for shoring up could be matured, the architect observed indication that the edifice was falling. He at once warned the workmen to leave, which they did, and before he was enabled himself to get entirely free the southern arches of the nave and the large eastern arch fell, bringing down with them the southern clerestory. A small portion of the nave roof only remained; but a farther fall took place on the following day. It is impossible at present to say what will be the ultimate cost. The damage done by the first fall has been widely estimated from 400*l.* to 1,000*l.*

GAS.

AT the fifth annual meeting of the Sutton-in-Ashfield Gas Company, a dividend of 7½ per cent. per annum, free of income-tax, was declared. The growing demand for gas having rendered it necessary to extend the works, 100 new shares have been created.——The price of gas in Warrington (5s. per 1,000 feet) is considered to be unreasonably high, and its illuminating power not even good at that price. The gas company thinking themselves safe from competition, have not hitherto made any signs of concession to the popular demand for both cheapness and goodness. The board of guardians have taken the matter up, and several firms are talking of making their own gas.——Capt. Thos. Cook, F.R.S. has invented an improved lamp, and apparatus connected therewith, for lighting coal mines with gas. The principal feature in the invention appears to be the forcing of air from the surface through the lamp. He proposes reflectors to throw the light into the intricate workings of the mine.——Mr. S. Nibbs, of Soho, Birmingham, the inventor of "the People's Lamp," has produced a new "safety lamp."——Mr. Wm. Gossage, of Widnes, proposes the separation of the hydrosulphuret of ammonia and sulphuretted hydrogen from coal gas, by employing sulphuric acid, and therewith converting the hydrosulphuret of ammonia into sulphite of ammonia, and decomposing the sulphuretted hydrogen, so obtaining two valuable products—sulphur and sulphite of ammonia, and depriving the gas of its injurious sulphur compounds.——"Recently," says an American paper, "successful experiments have been made in the manufacture of illuminating gas from wood. A patent was first applied for in America, in 1853, by a German chemist, the assignee of the discoverer, Emil Briesach. Under this patent different gasworks have been erected in that country, and with satisfactory results. Where wood is cheap, it is believed this gaseous product will be cheap. The residuum consists of charcoal and tar, and creosote and pyroligneous acid may also be obtained. Different kinds of wood may be used for this purpose. One cord of ordinary pine wood of 128 cubic feet produces gas-light equal to 800lb. of spermaceti candles: one cord of oak or maple of good quality will yield gaslight equal to 900lb. of spermaceti candles. This estimate is upon wood used without a careful drying."

ANGLO-ROMANO GAS COMPANY.

THE dividend declared at the recent half-yearly meeting of this company was at the rate of 5 per cent. for the past half-year. The progress of the works has been very successful since the declaration of the last dividend. The company was established in Rome, under statutes, in 1852, and its working operations have given unmixed satisfaction. We may remind our readers that Rome was first lighted with gas, January 1, 1854. The works are erected upon the site of the Circus Maximus, rendered memorable as the scene where the Sabine women were carried off by the Romans. They are constructed of a capacity to furnish from 170,000 to 200,000 cubic feet of gas per twenty-four hours, with two gas-holders of 65,000 cubic feet each, and are situated within 200 yards of the Tiber. All the leading streets of Rome are lighted, and the company are extending their pipes to the streets adjacent to the principal mains. The courts of the Vatican are brilliantly illuminated (the Pope having liberally supported the company since its formation), and the Grand Square of St. Peter's, the Quirinal, the palaces of the nobility, the chief hotels, and other public establishments. The social and moral effects of this change are felt by all classes.

Mr. Shepherd, the gérant and engineer, has been honoured with frequent marks of approbation from his Holiness, who has on several occasions visited and inspected the works, and expressed his desire for their success. Mr. Shepherd had earned celebrity in his profession before visiting Rome, having erected the gas works at the Hague, Cadiz, Bologna, Modena, and other places.

PROPOSED TOLL ON THE WAY TO "THE PEOPLE'S" PARK," AT BATTERSEA.

THE announcement made on the part of the Government, that they intend to set up a bar on Chelsea new bridge, and to charge a poll-tax on every man, woman, and child either going to or coming from Battersea-park across that bridge, is exciting no little ferment amongst the pent-up crowded denizens of the back streets in Chelsea, Brompton, Pimlico, and surrounding districts. That so bad an example should be set by the Government, at a time when metropolitan toll-bars have become an intolerable nuisance and abomination in the eyes of thousands even of those far better able to bear such taxes than those poorest of the poor with whom Chelsea and its vicinity are well known to be crowded, is much to be deplored. And this, too, all the more, that the very same end, namely, the redemption of the cost of erecting the bridge in question, could obviously be effected by a process the very reverse of the obnoxious one which the Government appear to think requisite; inasmuch as a free way to and from the building sites which surround the new park, and which belong to the Government, would enhance the value of the property, and promote its speedy conversion into an equally efficient and much less obnoxious means of redeeming all cost in the course of time. A movement is being made for the purpose of urging on Government the propriety of giving up all idea of taxing the public health as contemplated; and an energetic address, which cannot but meet with the cordial concurrence of all disinterested persons, is now being widely distributed by the committee who have taken up the cause of the public on this question. The address is signed by Mr. Walter T. Jones, of 93, Cambridge-street, Warwick-square, as hon. secretary, to whom all communications and subscriptions in aid of the very desirable object in view may be addressed.

Books Received.

Memorials, Scientific and Literary, of Andrew Crosse, the Electrician. London: Longman and Co. 1857.

No one who can recall, with scientific interest, the chief topics of discussion in science some twenty years ago, will need much refreshment of memory in respect to Crosse, Flint, and Acari,—an indissoluble association of curious subjects which then startled the whole world of science. For behoof of many whose memories as to that epoch may relate much rather to pedagogues, marbles, and poll-scrubbings, than to anything so uninteresting and unintelligible, we may here note down a few words of explanation. At the meeting of the "British Association," in 1836,

the grand feature of interest to the *savans*, and which eclipsed all else for the time, was the sudden blaze of a scientific comet, in the form of A. Crosse, a great electrician, of whom scarcely any one had ever heard before, although he had long experimented with the electricity of the atmosphere and the thunder cloud upon a scale of grandeur totally unprecedented, and had succeeded in imitating many of nature's processes of mineralization and crystallization, in a way that had scarcely ever been thought of, far less attempted. The excitement and *éclat* with which the solitary electrician thus made his reluctant *début* in the scientific world, had scarcely time to cool and settle down a little, when a still more intense interest and excitement arose on the announcement that Mr. Crosse, in course of an experiment undertaken for the purpose of crystallizing silex by means of long-continued electric action of low intensity, had, to his own astonishment, produced, in place of quartz crystals, something exceedingly like insect life, in the midst of caustic solutions of flint, and with the exclusion of atmospheric air. That the product consisted of true acari or mites of some description, there could at length be no doubt, but how they came there, or how they were produced, remained a mystery, as we believe they still do to this day, notwithstanding Ehrenberg's scarcely less curious and interesting microscopical discovery, that the chalk with which flint is generally found covered, consists of myriads of the shells of microscopic insects. How the ova of any insect, however, that might be supposed to exist in flint itself, could withstand the white heat applied by Crosse in calcination while producing the "oil of flints," or solution of silicate of potash, with which his experiments were performed, and could afterwards be developed into the perfect insect by electric action, under such circumstances as those indicated, was almost as astonishing as the creation of animal life itself. Absolute *creation*, Crosse warmly disclaimed, as indeed he did all hypothesis or theory whatever on the subject: all he did was to announce and to stand by the fact. Yet he speaks of the acari in such a way as to show to some extent his inner mind on the strange subject, as in his letter to Harriet Martineau at the time of his discovery. "There is a considerable similitude," he remarks, "between the first stages of the birth of acari and of certain mineral crystallizations electrically produced. In many of them, more especially in the formation of sulphate of lime or sulphate of strontia, its commencement is denoted by a whitish speck: so it is in birth of the acarus. This mineral speck enlarges and elongates vertically: so it does with the acarus. Then the mineral throws out whitish filaments: so does the acarus speck. So far it is difficult to detect the difference between the incipient mineral and the animal; but, as these filaments become more definite in each, in the mineral they become rigid, shining, transparent, six-sided prisms: in the animal they are soft, and having filaments, and finally endowed with motion and life."

The present volume has been written by Cornelia A. H. Crosse, as a labour of love and reverence towards her deceased husband; and, without much literary pretension, it is replete with interest. Mr. Crosse was a poet of no despicable ability, as well as a man of science: and the volume is interspersed with not a few of his poetical effusions, as well as of his prose productions; which latter, however, are chiefly in the form of notes and letters.

Miscellanea.

NEW SOLDERING TOOLS. — Messrs. Whitehouse and Laws have invented an improved construction of tools for soldering metals, whereby they are kept constantly heated in a simple manner. The "bitt," or soldering end of the tool, is heated by a jet of gas, placed either inside or externally to the "bitt," the gas for supplying such jet being brought to the soldering tool by means of a flexible tube. One mode of effecting this object is by conveying the gas through a tube in the handle of the tool.

THE VISITORS TO THE MANCHESTER EXHIBITION.—The following shows the daily attendance at the Exhibition during the first month it has been open:—

Tuesday	May 5	12,000	Thursday ...	May 21	7,102
Wednesday...	„ 6	5,195	Friday	„ 22	6,168
Thursday.....	„ 7	5,771	Saturday.....	„ 23	7,891
Friday	„ 8	4,332			
Saturday.....	„ 9	6,832	Monday	„ 25	4,918
			Tuesday	„ 26	8,575
Monday	„ 11	3,437	Wednesday...	„ 27	9,333
Tuesday	„ 12	4,237	Thursday.....	„ 28	8,677
Wednesday...	„ 13	4,767	Friday	„ 29	6,312
Thursday.....	„ 14	8,490	Saturday	„ 30	9,702
Friday	„ 15	3,584			
Saturday.....	„ 16	7,810	Monday	June 1	9,514
			Tuesday	„ 2	10,398
Monday	„ 18	4,399	Wednesday...	„ 3	7,897
Tuesday	„ 19	5,201	Thursday.....	„ 4	5,603
Wednesday...	„ 20	5,631	Friday	„ 5	11,524

The total number of visitors since the opening has been nearly 200,000.

PRINTERS' ALMSHOUSES (WOOD-GREEN, MIDDLESEX).—The annual meeting of the subscribers and friends to this institution was held on Tuesday evening, at Anderton's Hotel, Fleet-street; Chas. Wyman, Esq. in the chair. From the report, it appeared that a large measure of support had been awarded to the society during the past year, in the course of which it will be remembered the Asylum was publicly inaugurated by the President, Earl Stanhope, when a public breakfast took place on the grounds, which was largely patronized. The receipts during the year were 1,257*l.* 10s. 7d. and the expenditure, including 400*l.* invested in the public funds, amounted to 1,145*l.* 11s. 7d. leaving a balance at the bankers' of 111*l.* 16s. The report having been received and ordered to be printed, Mr. William Clowes was appointed vice-president of the institution; Mr. Vincent Figgins, treasurer; and Messrs. W. H. Cox, T. R. Harrison, H. Hansard, and W. Rivington, the trustees; and after votes of thanks to the secretary and chairman, the meeting separated. Prior to the annual meeting, a second election of inmates took place by ballot, the close of which showed the following as the successful candidates: Robert Hall (aged 78, married); George Conway (aged 67, married); Anne Roe (63, widow). The anniversary of the opening of the institution will be celebrated by a *soirée* on Monday, June 15, at Highbury-barn; and on Sunday morning, June 28, the Vicar of Tottenham will advocate the claims of the Institution at St. Michael's Church, Wood-green.

IRON BUILDING, MANCHESTER.—A building has been put up recently near the Art Treasures Exhibition, which has excited some attention, in consequence of the rapidity with which it was done. It has been built at a cost of about 400*l.* by Messrs. E. T. Bellhouse and Co. for Mr. Ogden, of Long Millgate, Manchester, for the purpose of receiving a valuable collection of paintings, antiquities, and curiosities, which that gentleman wishes to bring under the notice of the visitors of the Art Treasures Exhibition. The building consists of a cellar and upper room, and is 65 feet long, and 32 feet wide: the cellar is 8 feet high, and the walls thereof are of brick: the upper room is 15 feet high to the eaves, and the roof is raised so as to give sloping and perpendicular glazed lights; thus leaving the whole of the wall space free for pictures and other objects. The shell of the upper portion of the building, above the floor, is composed of corrugated iron sheets, attached to pilasters and roof principals. The interior of all the wall is lined with boarding, upon which are paper and maroon-coloured calico cloth. Thirteen working days only elapsed between laying the first brick and the completion of the building; and this short time includes the manufacture of the materials as well as the complete erection of the same. The building is of very creditable external appearance; and when it has served its present purpose as a fine art gallery, it may be made valuable to the neighbourhood by being devoted to the purposes of public worship, education, or lecturing, as might be required in this increasing district.

ADDITION TO THE MUSEUM AT PEEL'S PARK, MANCHESTER.—The new wing, added since last year, is now complete. It consists of one large room, on the ground-floor, divided into two compartments, and, over it, a gallery, 80 feet long by 30 feet wide, which is now filled with the works of local artists. There is also an entrance from the park on the south side. Leading from the southern door to the main staircase, is a corridor, with fluted pillars, the ceiling of which is being painted in fresco. A small portion only of this work has been completed, but the local *Courier* speaks favourably of it. The room leading from the corridor is called the engraving-room, and contains all the engravings previously in the old gallery, with additions. Among its contents, also, are numerous architectural models, and several pieces of sculpture by Mr. Westmacott. The semi-division of the room gives additional wall-space for the purposes of exhibition. There is another room in the new wing, underneath the engraving-room, but it is not yet completed. It is intended to be used as a geological and model-room.

COMPLETION OF THE LOUVRE AT PARIS.—On 15th August, the anniversary of the Fête Napoleon, the Emperor, the Empress, and the grand dignitaries of the empire will attend a solemn inauguration of the Palais of the Louvre, which will then be entirely finished.

THE VIVIAN MEMORIAL, SWANSEA.—The memorial in honour of the late John Henry Vivian, F.R.S. and M P., was inaugurated at Swansea on 2nd inst. The statue, which stands on a pedestal of Cornish granite, was cast at the foundry of Messrs. Robinson and Cottam, Pimlico, in one piece. The bronze contains a large proportion of copper. The precise height is 8 feet 6 inches, including a bronze plinth, and the weight is about a ton and a half. The pedestal weighs at least twenty tons.

STRIKES.—At Liverpool the stonemasons' dispute is still unsettled. One of the local papers gives the following summary of recent proceedings:—The architects and master-builders of the town lately held a meeting in the Clarendon-rooms on this subject, when it was resolved to recommend both parties to leave the settlement of the question to certain well-known and disinterested gentlemen, each party agreeing to abide by the decision. The masters readily adopted the recommendation for themselves; but the operatives, thinking that no *obligation* to abide by the decision of the arbiters should be insisted on, refused to place themselves in the hands of the gentlemen named further than merely to consider the advice which might be tendered. The masters, believing that no harm could arise from a discussion of the subjects in dispute, agreed to meet the men in conference on their own terms. The meeting took place on Friday, when the Rev. H. S. Brown, Baptist minister, Mr. William Rathbone, J.P., and Mr. Councillor J. R. Jeffery, met a deputation from each of the disputant parties. It was understood that neither masters nor men were to be bound by any opinion of the mediators. The men were not prepared to recede in any degree from their previously submitted demands, so that the masters could not make any overtures. One of the things which seemed to be most objectionable to the employers was the men's requiring the masters to accept their terms as to apprentices. The mediators recommended the men to reconsider their demands, with a view of their being modified, and they promised to do so and report. An agreement, we may add, to settle wages *per hour*, was strongly urged by Mr. Jeffery.——The Tyne shipwrights, who were on strike in consequence of a reduction of wages from 6s. to 4s. 6d. have resumed work on a compromise that the reduction be to 5s. only. The Wear men were to submit to the same arrangement, and the Blythe shipwrights have already done so.

OPENING OF THE ASIATIC SAILORS' HOME.—On the 3rd inst. the new Home for Asiatic Seamen, lately erected in the East-India-road, Limehouse, was formally opened by Lord H. Cholmondely. The building was completed in January last, but could not be opened until the present time from want of funds. It is a large red brick building, having about from 150 to 200 feet frontage. The internal arrangements are fitted to accommodate 130 inmates. Separate portions are set aside for superintendent's apartments, hospital, registry, shipping, and secretary's offices, all of which are provided with appliances for lighting, warming, hot and cold baths, and lavatories. The total cost of the building, not including 1,220*l.* for the site, and 300*l.* architects' commission, was between 8,000*l.* and 9,000*l.* The other expenses connected with the erection were between 2,000*l.* and 3,000*l.* making a total of 13,000*l.* expended: of this sum only about 7,000*l.* were subscribed, leaving the promoters of the scheme 6,000*l.* in debt on its account. The proceedings took place in the principal room of the new building, one side of which was occupied by Asiatic seamen from almost every portion of Asia.

LAYING THE FOUNDATION STONE OF THE CLOCK AND WATCHMAKERS' ASYLUM. — The foundation stone of this asylum was laid last week, at Colney-hatch, near the Great Northern Railway Station, Mr. T. S. Duncombe, M.P. for Finsbury, officiating. The asylum, which will be in the Tudor style of architecture, formed of red brick, decorated with stone dressings, is from a design by Mr. Robert Pulgrave, architect, and is intended to provide a home, with fuel and light, and an annual pension of 20*l.* to the men, and 13*l.* to the widows, for such as may be elected by the subscribers. It is proposed to build thirteen houses immediately, and subsequently to increase the number, and with this view an eligible piece of freehold land of two acres in extent, has been purchased; plans, building estimates, &c. obtained, and a large amount subscribed for building purposes.

FALL OF A BUILDING AT WOLVERHAMPTON.—Last week a portion of a warehouse in Temple-street, to which extensive additions are being made, fell, and buried five workmen under the ruins, one of whom was not expected to live. The upper floor of the building was supported by an arch, strengthened by an iron girder. The girder broke, and the floor gave way, carrying with it the next floor.

THE NEW CONVENT, ARMAGH.—Mr. M'Gaughey, of Omagh, has been declared the contractor for building the new convent at Armagh. The *Armagh Guardian* gives the amount of the tenders as follows—

Ross (Belfast)	£6,100
M'Cullagh and Cherry	5,764
Peter Hughes	5,754
M'Gaughey	5,022

Mr. Ross's tender included about 300*l.* worth of additional stone-work, which was not in the other estimates; so that the first three competitors were nearly equal in amount.

PROPOSED MEMORIAL TO JOHN BRITTON IN KINGTON ST. MICHAEL CHURCH.—The proposition to perpetuate the late Mr. Britton's name in his native parish, by erecting some kind of memorial to him within the church, has taken a shape, and a list of subscriptions is published. It is not out of any spirit of dissatisfaction or rivalry with the proposition of the Institute that the present proposal is made; but, as Mr. Britton was a native of Kington St. Michael, rose by his own exertions from very humble circumstances to a position of literary eminence, and, as it is also well known to his more immediate friends, that he was very much attached to his native place, and was desirous that his name and history might not be forgotten there; there is no doubt in the minds of those with whom the present proposal originates, that in gratifying their own feelings they are also doing that which would have gratified his.

LEEDS SCHOOL OF PRACTICAL ART.—The annual meeting of the friends and supporters of this school took place on the 3rd instant in the hall of the Mechanics' Institution and Literary Society at Leeds. The attendance was limited but select. The hall was fitted up for the occasion, with a display of works of art. Mr. W. B. Denison, president of the school, was in the chair. The report stated that there were altogether 104 pupils attending the central school. The head master has under his personal charge, besides the central, eight other schools wherein he gives lessons—namely, Ackworth schools, 200; Wakefield Mechanics' Institution, 26; Leeds Mechanics' Institution (boys' school) 90; Leeds Ladies' Educational Institution, 50; Marshall's school, Holbeck, 150; St. Matthew's do. 150; St. George's do. 180; St. Peter's do. 30. The school has now in action two certificated masters, Mr. John White, head master, and Mr. Charles Ryan, assistant master. The assistant master has under his charge twelve classes in public schools and institutions—namely, Woodhouse Mechanics' Institution, 12; East Ward do. 12; Kirkstall do. 9; Headingley do. 19; Halifax Working Man's College, 22; Kirkstall school, 50: Burley school, 75; St. Andrew's school, 30; St. Ann's school, 16; two private schools, 38; West End Mechanics' Institutions, 9. At present there are 86 females receiving lessons in connection with the central schools, and under the head master's personal care. Mechanical drawing is taught in the central schools, and in several of the popular institutions in which the masters give lessons.

PRACTICAL MINING COLLEGE. — Mr. Nicholas Wood and Mr. Woodhouse (a deputation from the Institute of Mining Engineers), accompanied by Mr. Robert Stephenson, M.P. and Mr. Joseph Locke, M.P. had an interview with Sir George Grey, on 30th ult. at the Home-office, on the subject of the establishment of a Practical Mining College.

THE DARK ARCHES OF THE ADELPHI. — Some alarm has been excited amongst the inhabitants of the Adelphi, in consequence of the pestilential stench which, during the few days of hot weather, proceeded from the well-known "Dark Arches," the filthy state of which has been so frequently described. In the streets into which the arches immediately open, the stench is almost unendurable, and, if not at once checked by some cleansing process, hitherto almost systematically neglected, the result will probably be the breaking out of some malignant form of fever amongst the inhabitants. The disaster at Washington, U. S. ought to aid us in enforcing the necessity for sanitary arrangements. The principal hotel there, the National, is now closed, having killed some thirty of its guests, and poisoned, less effectually, about 500. The exact cause of the said occurrence is still a mystery. The investigation made has not been satisfactory, but the medical and other authorities have decided that it was only bad air and choked drains. A subscription is on foot to defray the expense of a more searching inquiry—a little too late, it is to be feared.

NATIONAL COLLECTIONS. — In the year 1856-57 the sum total of 202,467*l.* was expended on national collections, against 228,866*l.* in 1855-56. 46,490*l.* were appropriated to the British Museum establishment, 49,768*l.* to the buildings, and 20,454*l.* to purchases; 12,077*l.* to the National Gallery; 5,815*l.* to scientific works and experiments; 500*l.* to the Royal Geographical Society; 58,966*l.* to the Department of Science and Art; 7,312*l.* to the Museum of Practical Geology; and 1,000*l.* to the Royal Society. The total amount expended on the purchase and laying out of the Kensington-gore estate from 1851 to 1856 inclusive is 277,309*l.*

ELECTRIC LIGHT.—Prof. Way has specified his improvements in obtaining light by electricity. "What I claim," he states, "is, the use of a flowing electrode of mercury in combination with apparatus for regulating the distance apart of the two electrodes; and I also claim the combination of a small overflowing cup or regulated surface of mercury, as a second electrode with a flowing electrode of mercury in apparatus for obtaining light by electricity."

ANOMALIES IN THE TIMBER TRADE.—Mr. Edward Chaloner, of Liverpool, in his circular of 29th ult. remarks, in reference to a cargo of New Brunswick and Nova Scotia deals,—"The duty on this cargo of sawn wood is 200*l.* and, if exported, must be paid; whereas any other sawn wood, except colonial, can escape all Customs duty whatever; all other sawn wood may be bonded—colonial cannot!" And again,—"Baltic sawn stuff can be now exported to Australia and elsewhere much beneath the cost of all American, and also cheaper than colonial deals; for even under a declared system of free trade these last cannot be exported or even bonded without first paying a Customs' duty of 7s. 6d. per standard, or 8½ per cent. on the first cost—say on St. John spruce deals. They cannot even be transshipped to another colony without this imposition. On the contrary, all foreign wood, sawn or unsawn, may be bonded or otherwise transshipped free of all Customs' duty, such being equal to about fifty per cent. on the first cost of those foreign or Baltic deals which are those more in competition with colonial. So that the staple manufacture of the colonies cannot here escape the 8½ per cent. tax, while the foreigner can save, or indeed in a way recover, about 50 per cent. on his manufacture—as it were on declared neutral ground." Further,—"It is somewhat inconsistent that the ship wrought of pitch pine in her masts, spars, planking, &c. and employed to carry the like material to our own artizans while rewarded with freight may herself be sold free of duty in Great Britain, while the raw material thus brought must be taxed as above for the essential repairs of the like or any other ship in England; and further, whilst all furniture and most ship-building woods are admitted duty free, pitch pine, extensively used for both purposes, is subject to the high duty of 7s. 6d. to 10s. per load."

CARE FOR THE DOGS.—When improvement in the condition of man, or the beast under his care and control, is the object in view, your excellent publication is always open to advance and advocate it. Without further preamble, therefore, I would suggest whether some plan could not be devised during the present, and still more so the coming hot season of the year, to provide receptacles of some kind for water in the public streets and highways, to which dogs might have constant and easy access. There is little doubt but that the want of this prime necessary of existence to all animals is, in a much greater degree than is generally supposed, the cause of canine madness. A paragraph, however brief, in your columns, on this subject, would, I am sure, call forth suggestions from friends to dumb animals, and to dogs in particular, that might lead to results greatly to be desired both as regards humanity as well as expediency.—E. C.

THE COPPER TRADE.—The smelters have resolved on further reducing the price of copper 1d. per lb. making tough cake and tile, 117*l.* best selected, 120*l.* per ton; copper sheathing and braziers' sheets, 13d. per lb. This has been followed, as usual, at Birmingham, by a reduction in the price of brass tubes, rolled brass, and brass wire, of three-farthings per lb.

[ADVERTISEMENT.]

TO THE EDITOR OF THE "BUILDER."

86, Regent-street, June 2, 1857.

MESSRS. CLARK AND CO.

GENTLEMEN,—In reply to your inquiry as to my opinion of your shutters and work, I beg to say, that the brass front, &c. you put in for me, I think, is equal in finish, and, indeed, altogether such as is not to be excelled by any other in London; it wears well, and I think the colour of the brass is excellent. As to the shutters, it is now upwards of seven years since they commenced work: I believe, for repairs, a few shillings will cover all charge, except a small annual one for oiling. They do and have worked well during all that time, and no accident has occurred to them; and I believe them to be in perfectly sound condition now.

I beg to remain, yours obediently,

JAMES MEDWIN.

TENDERS

For alterations at Marston House, Somerset, for the Right Hon. the Earl of Cork and Orrery:—

Long, Bradford	£4,636	0	0
Morgan and Lovell, Bath	3,568	0	0
Treasure, Bath	3,560	16	0
Davis, Frome (omitting work of the value of 34*l.*)	3,461	9	6
Browne, Frome (accepted)	3,455	0	0

For building schools in connection with Trinity Chapel, Poplar. Quantities supplied by Mr. George Moring:—

Salt	£1,500	0	0
Ward	1,449	0	0
Watts	1,375	0	0
Watkins	1,328	0	0
Atherton	1,298	0	0
Hack and Son (accepted)	1,263	0	0

For St. Saviour's workhouse. Messrs. Roper and Jarvis, architects. Quantities supplied:—

Sutton	£8,414	5	8
Lee and Lavers	6,973	0	0
Dovor and Sons	6,790	0	0
Crawley	6,750	0	0
Keast and Moon	6,657	0	0
Taylor and Buckley	6,629	0	0
Trollope	6,608	0	0
Tarrant	6,592	0	0
Harrison	6,588	0	0
Rowe	6,394	0	0
Colls and Co.	6,190	0	0
Myers	6,170	0	0
Palmer	6,162	13	4
Hocken	6,150	0	0
Rider	6,100	0	0
Hack and Son	6,098	0	0
M'Clennan and Bird	6,055	0	0
Marsland	6,050	0	0
Dennis	6,000	0	0
Bennett and Sass	5,995	0	0
Hill	5,953	0	0
Patrick and Son	5,868	0	0
Stump	5,831	0	0
Wilson	5,794	0	0
Thompson and Son	5,776	0	0
Downs	5,660	0	0

For alterations and additions to the Macclesfield Union Workhouse. Mr. James Stevens, architect. Quantities supplied:—

Mellor, Son, and Terras, Manchester	£2,515	0	0
Blackshaw, Macclesfield	2,424	0	0
Sanderson, Bollington	2,408	0	0
Evans, Macclesfield (accepted)	2,380	0	0
Wilkinson, Macclesfield	2,281	0	0

TO CORRESPONDENTS.

No. 101.—J. R. A.—C. M.—T. S.—W. S. (below our limit).—D. F (ditto).—S. L. M. (ditto).—W. W.—G. G.—T. C. H.—A.—T. M.—Julia (next week).—F. S.—E. T. B.—Mr. H.—R. K.—Mr. D.—C. M. I.—R. Y.—Looker on.—J. P.

"*Books and Addresses.*"—We are forced to decline pointing out books or finding addresses.

NOTICE. — All communications respecting *advertisements* should be addressed to the "Publisher," and not to the "Editor:" all other communications should be addressed to the EDITOR, and not to the Publisher.

ADVERTISEMENTS.

BOROUGH of STOCKTON-ON-TEES.—WANTED, for the Borough of Stockton, a Person duly qualified to perform the duties of SURVEYOR and INSPECTOR of NUISANCES. He will be required to draw working plans, prepare estimates and specifications, superintend the making and repairing highways and footpaths, and to report and remove all nuisances. He will likewise be required to collect the corporation rents, and to superintend the collection of the market-tolls. Applications in writing, stating previous employment, &c. together with testimonials as to character and ability, and the amount of salary required, to be sent, post-paid, to Mr. WILLIAM BEST, Clerk to the Local Board of Health, Stockton-on-Tees, on or before THURSDAY, the 18th day of JUNE instant. The person appointed will be required to provide two sufficient sureties for the due performance of the duties of his office in the sum of 200*l.*

Stockton-on-Tees, June 1st, 1857.

NORWICH WORKHOUSE.—CLERK of WORKS WANTED.—The Guardians of the Norwich Corporation of the Poor, are desirous of appointing a CLERK of the WORKS, to superintend, under the direction of Messrs. Medland and Maberly, architects, of Gloucester, the building of a new Workhouse, at Norwich, which is intended to be proceeded with forthwith. Salary, 50s. per week. No person connected with the building trade in Norwich is eligible as a candidate. Candidates must transmit their applications, accompanied with testimonials, as to character and competency, to me at my Office, Little Orford-street, Norwich, on or before FRIDAY, the 19th instant, at TWELVE o'clock at noon, and appear personally before the Building Committee, at the Court-room, St. Andrew's-hall, Norwich, on the same day, at TWO p.m.

Norwich, June 11, 1857. E. C. BAILEY, Clerk.

TO PARENTS AND GUARDIANS.

THE Subscriber is desirous to receive into his House a well-educated YOUTH as a PUPIL, where he will have the advantage of the constant supervision of the principal, and his social comforts will at the same time be attended to.—Apply, if by letter, prepaid, to Mr. W. WILDS, Architect and Surveyor, Hertford, Herts.

WANTED, a YOUTH, as an OUT-DOOR APPRENTICE or IMPROVER to a Practical House Decorator, Marbler, Grainer, Writer, Picture Restorer, and Gilder. He will be instructed in all the above branches. First-rate references can be had.—A premium required, and a salary given.—Apply to SAMUEL BURNBY, Denmark-hill, Camberwell.

WANTED, by a Builder in the Country, a WORKING FOREMAN, who can make plain and working drawings, and take out quantities.—Apply to Mr BUSH, Architect and Surveyor, 15, Clifford-street, Bond-street, W.

TO GLASS PAINTERS.

WANTED, a good FIGURE PAINTER.—Apply, stating salary required, &c. to SCOTT and DRAPER, Carlisle.

WANTED, to fill a constant SITUATION in the country, on a gentleman's estate, a HOUSE and FARM CARPENTER, one who understands general repairs. Wages 20s. per week, with good cottage and garden rent free.—Apply by letter, prepaid, to Mr. ARNOLD, Builder, 109, Jermyn-street, S.W.

N.B.—None need apply who cannot give a good reference.

TO GLASS PAINTERS AND LEAD WORKERS.

WANTED, a few good GLASS PAINTERS and LEAD WORKERS. — Apply to Messrs. EDMUNDSON and SON, No. 1, Angle-street, Oxford-street, Manchester.

N.B. As the advertisers are thoroughly practical men, in every branch of the art, they trust none will apply but those who perfectly understand their business, or state exactly the amount of their ability.

TO CARPENTERS AND JOINERS.

WANTED, in a Country Town, a CARPENTER, used to jobbing in Gentlemen's houses; constant employment. Wages 24s per week.—Address, by letter only, to Mr. HARLAND, 33, Southampton-street, Strand, W.C.